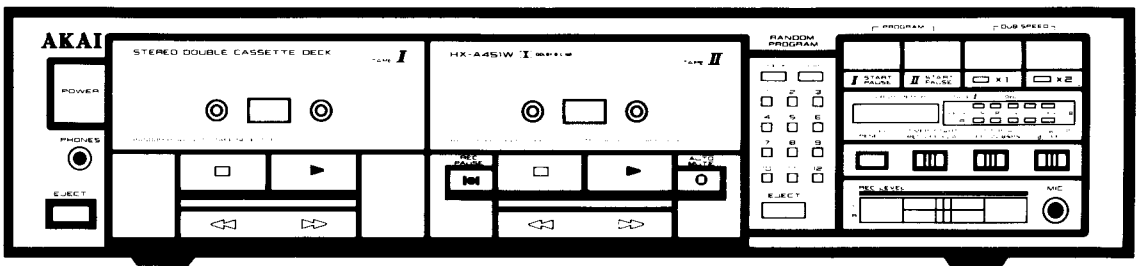
HX-A451W

AKAI SERVICE MANUAL



STEREO DOUBLE CASSETTE DECK

MODEL HX-A451W

SPECIFICATIONS

Track system	4 track 2 channel stereo
Heads	HD head for recording and playback × 1 HD head for playback × 1 Erase head × 1
Motors	DC motor for capstan drive × 1 DC motor for reel drive × 1
Wow & flutter	0.09% WRMS (JIS), 0.12% (DIN)
Frequency response	
Normal	30 Hz to 15,000 Hz ± 3dB
CrO_2	30 Hz to 15,000 Hz ± 3dB
Metal	30 Hz to 16,000 Hz ± 3 dB
S/N (Metal)	57 dB Dolby B type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz Dolby C type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
Harmonic distortion	Less than 0.8% (Metal)
Input sensitivity/Impedance	
LINE	70 mV/47 kohms
MIC	0.25 mV/5 kohms
Output sensitivity/Impedance	
LINE	388 mV/2 kohms
Headphones	0.3 mW (8 ohms)
Power requirements	120 V, 60 Hz for USA & Canada 220V, 50 Hz for Europe except UK 240 V, 50 Hz for UK & Australia 110 V/120 V/220 V/240 V, 50 Hz/60 Hz convertible for other countries
Dimensions	440(W) × 108(H) × 291(D) mm (17.3 × 4.3 × 11.5 inches)
Weight	4.4 kg (9.7 lbs)

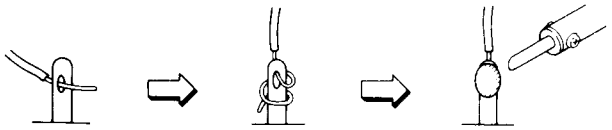
* For improvement purposes, specifications and design are subject to change without notice.

* "DOLBY" and the double-D symbol are trademarks of DOLBY Laboratories Licensing Corporation.
Noise reduction manufactured under license from DOLBY Laboratories Licensing Corporation.

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locatoins.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 M ohms. but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be headphone jacks line-in-out jacks etc. more than 2.2 M ohms (ground terminals, microphone jacks).

★INFORMATION

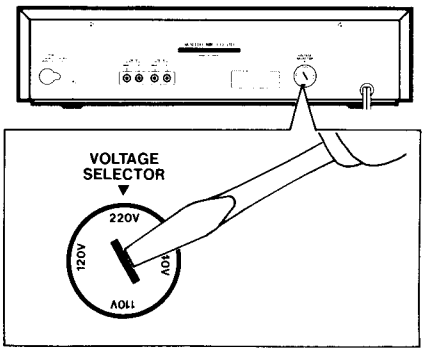
SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
[A]	USA
[B]	UK
[C]	Canada
[E]	Europe (except UK)
[J]	Japan
[S]	Australia
[V]	W. Germany only
[U]	Universal Area

VOLTAGE CONVERSION ([U] Model only)

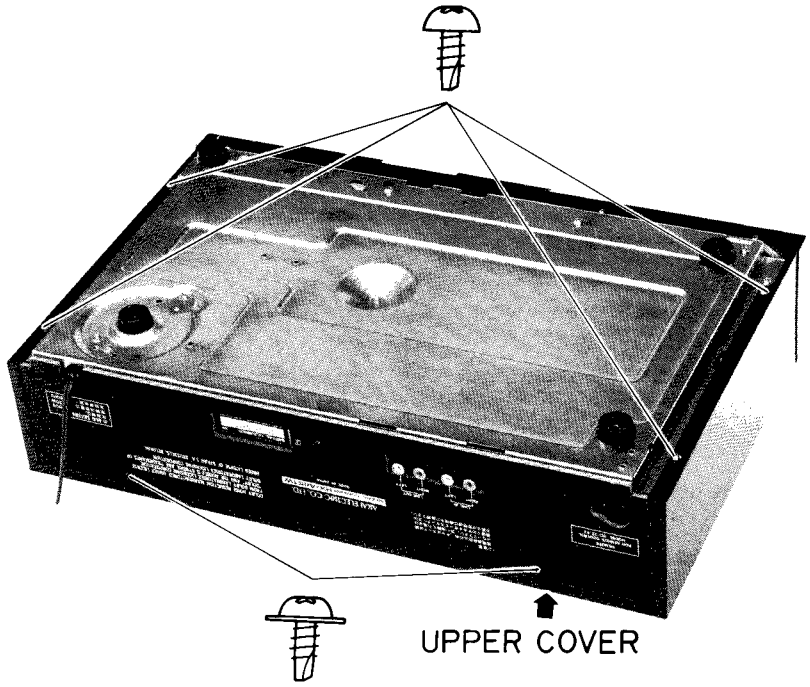
Before connecting the power cord, set the VOLTAGE SELECTOR located on the rear panel with a screwdriver so that the correct voltage is indicated.



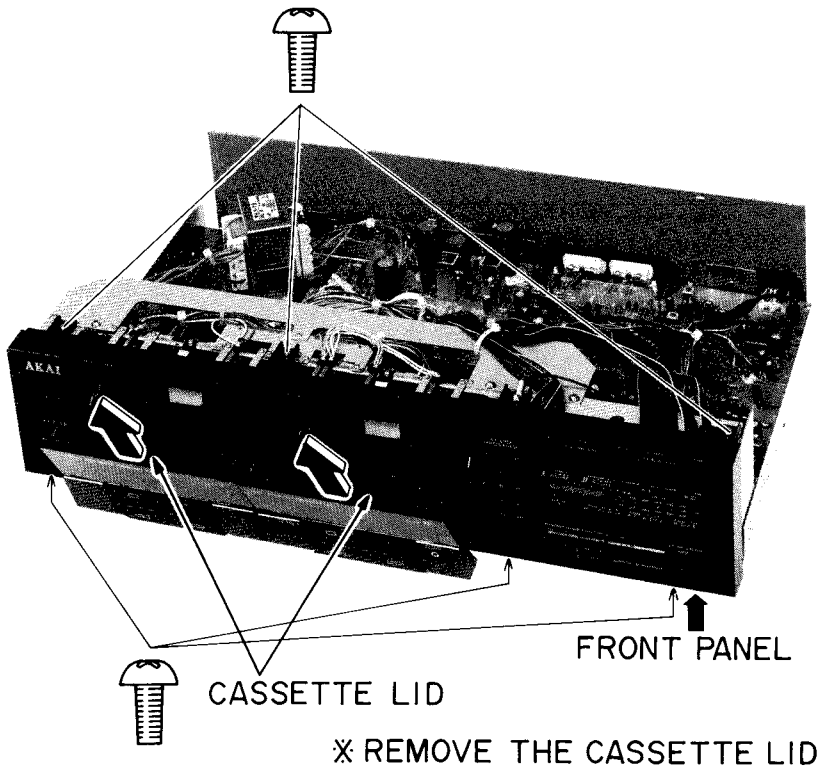
I. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs.
Reassemble in reverse order.

1. REMOVALE OF UPPER COVER

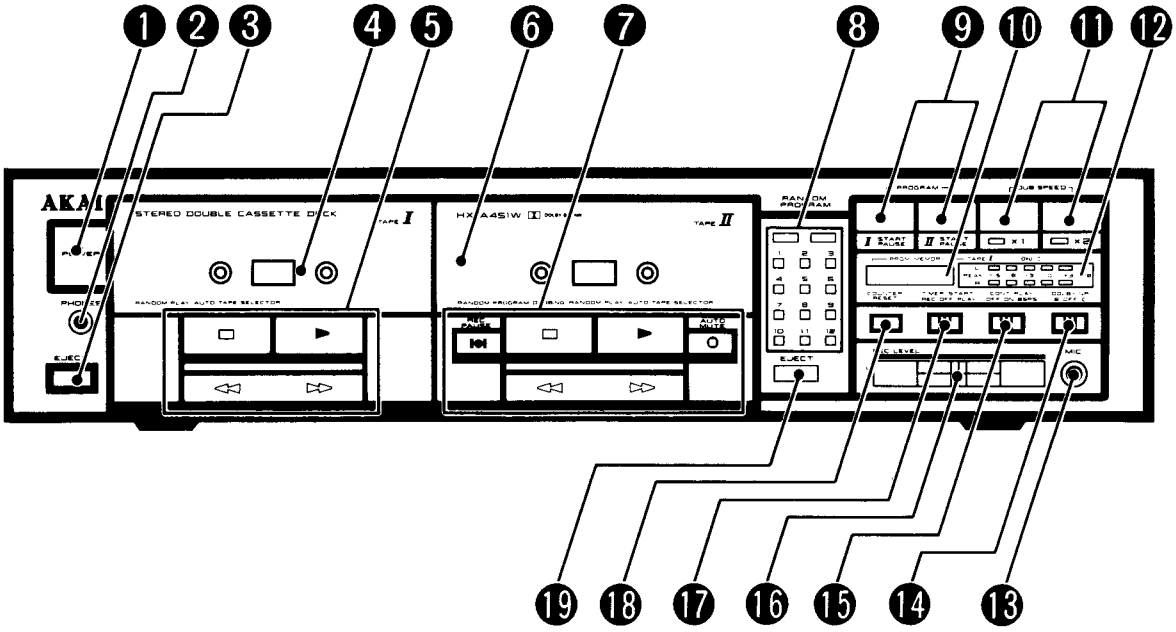


2. REMOVALE OF FRONT PANEL



※ REMOVE THE CASSETTE LIDS,
THEN REMOVE FRONT PANEL.

II. CONTROLS



❶ **POWER Switch**
To turn ON and OFF the power.

❷ **PHONES jack**
To listen through a pair of headphones, connect them to this jack.

❸ **TAPE I deck EJECT button**
To open the cassette holder.

❹ **TAPE I deck cassette holder and cassette lid**
To load a cassette for playback.

❺ **TAPE I deck operation buttons**
Stop (■), Play (▶), Rewind (◀◀) and Fast Forward (▶▶) buttons for playback operation.

❻ **TAPE II deck cassette holder and cassette lid**
To load a cassette for recording or playback.

❼ **TAPE II deck operation buttons**
REC PAUSE (●❚), Stop (■), Play (▶), AUTO MUTE (O), Rewind (◀◀) and Fast Forward (▶▶) buttons for playback and recording operation.

❽ **RANDOM PROGRAM 1 to 12, CHECK and CLEAR buttons**
For programming the random playback and the random program dubbing operation.

❾ **PROGRAM START PAUSE I/II button**
To start and stop random playback.

❿ **LED Digital display**
Shows tape running numerical index for both the TAPE I TAPE II decks, and programming number of the random program system.
PRGM MEMORY indicator
Tells you the random program is memorized.
TAPE I indicator
Tells you the digital display is showing the TAPE I deck tape counter.

⓫ **DUBBING SPEED ×1/×2 button and indicator**
To start and stop tape dubbing.

⓬ **LED PEAK Level Meter**
Shows recording and playback levels.

⓭ **MIC jack**
Use for microphone recording.

⓮ **DOLBY NR selector (B, OFF and C)**
To record or play back with the DOLBY B or C-type NR.

⓯ **CONT PLAY selector (ON and BSPS)**
To select the continuous playback mode.

⓰ **Left and Right REC LEVEL controls**
To set the recording input levels.

⓱ **TIMER START selector**
For absentee recording and timed playback.

⓲ **COUNTER RESET button**
To reset the digital tape counter to "0000".

⓳ **TAPE II deck EJECT button**
To open the cassette holder.

III. PRINCIPAL PARTS LOCATION

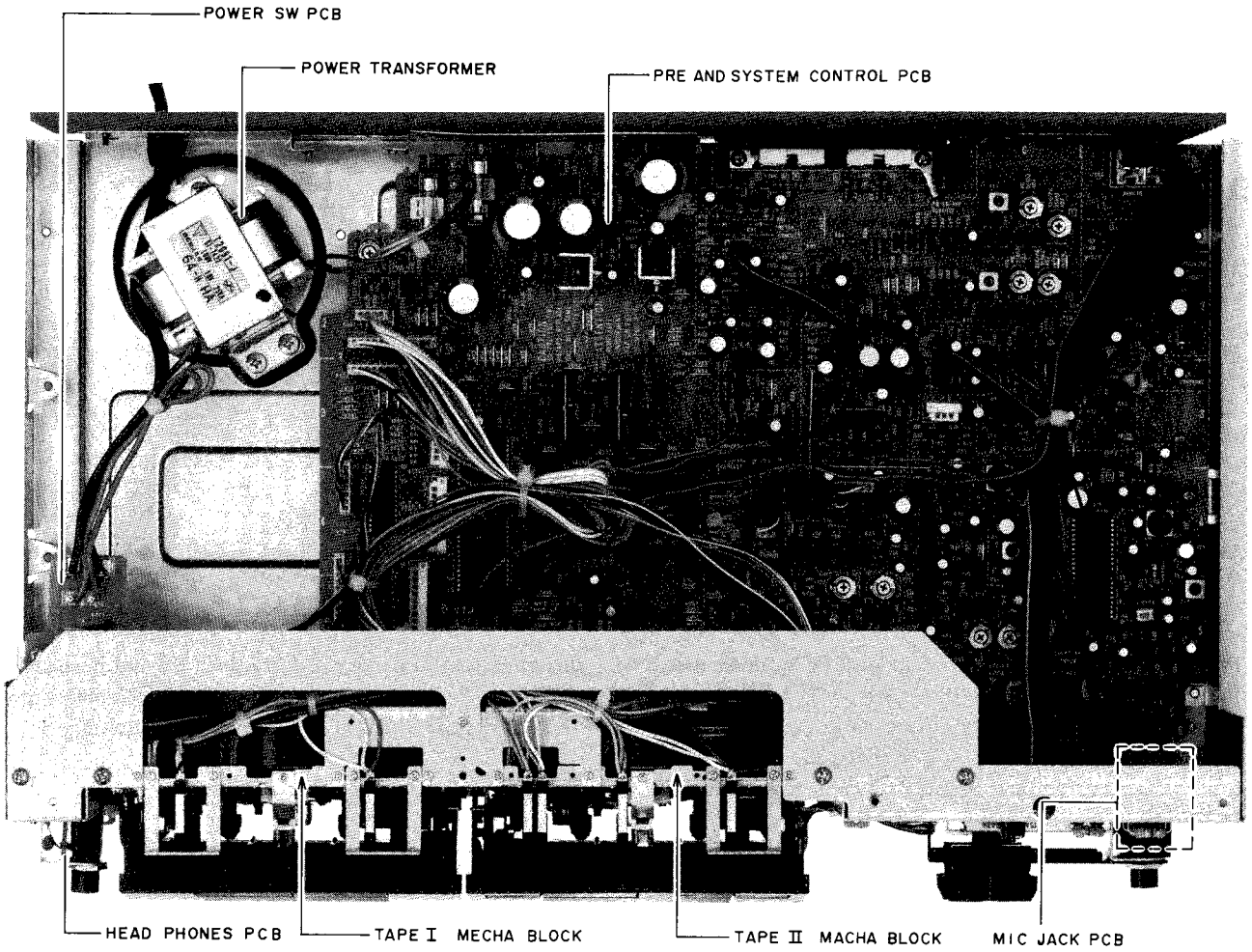


Fig. 3-1. Top View

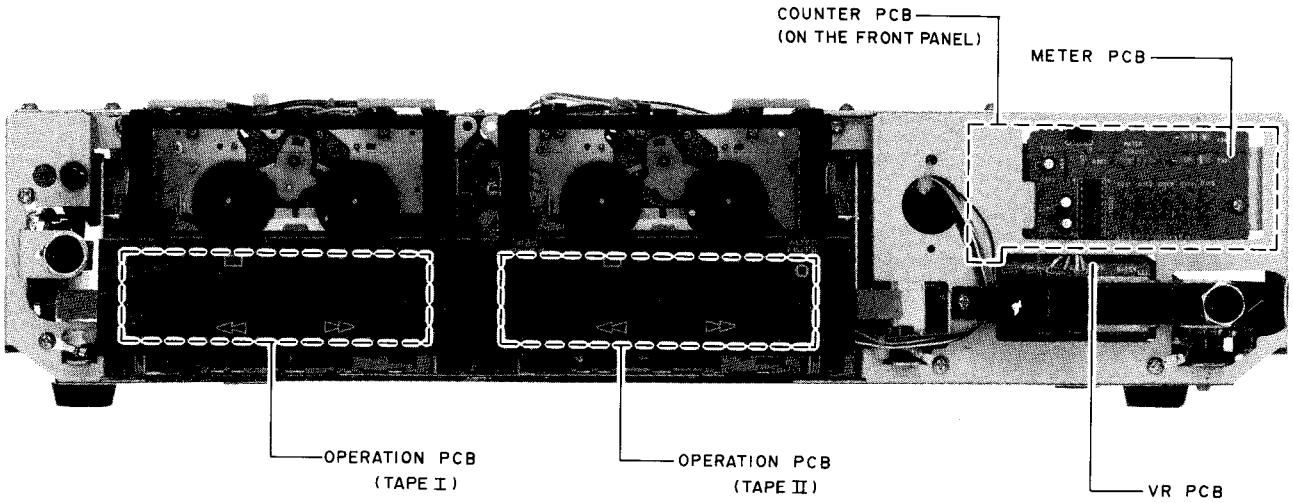


Fig. 3-2. Front View

IV. MECHANICAL ADJUSTMENT

4-1. PINCH ROLLER PRESSURE MEASUREMENT

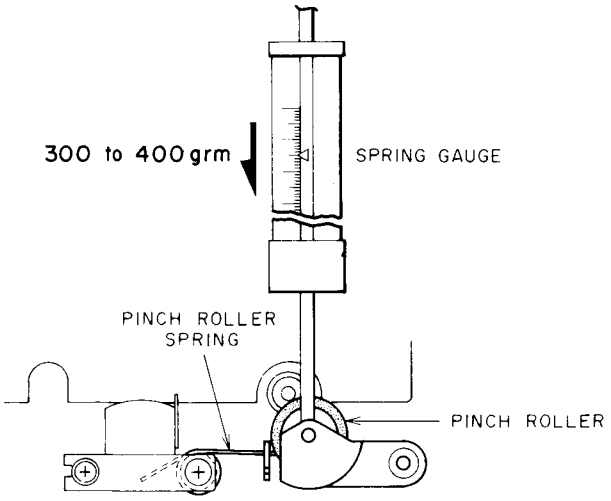


Fig. 4-1

Put in PLAY mode. Push pinch roller arm down with the spring gauge, push the pinch Roller 1 to 2mm away from the Capstan and release slowly.
Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate. Specified contact pressure measurement of 200 to 400 grm. If there is no measurement obtained, replace the pinch Roller spring.

4-2. WINDING TORQUE MEASUREMENT IN EACH MODE

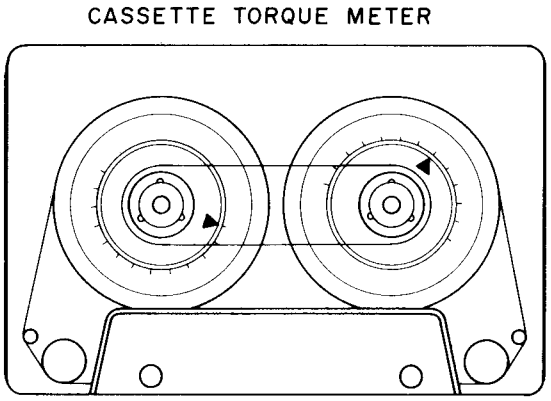


Fig. 4-2

Insert cassette torque meter (AJ-751179) and measure in each mode. For Fast Forward and Rewind, measure at the end of tape when the tape has stopped running.
PLAY Mode
Take up Torque: 30 to 70 grm-cm
Back tension torque: 1 to 6 grm-cm
FAST FORWARD, REWIND mode
Take up Torque: 70 to 160 grm-cm

V. HEAD ADJUSTMENT

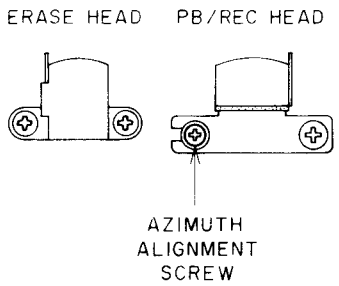


Fig. 5-1

Play Back a 10 kHz Azimuth Alignment Tape (AT-750778) and Adjust the Azimuth Alignment Screw, until the output levels of both channels are maximum. After Adjustment, Paintlock the Azimuth Alignment Screw.

VI. ELECTRICAL ADJUSTMENT

STEP No.	ADJUSTMENT ITEM
1.	TEST TAPE, SUPPLY SIGNAL
2.	MODE
3.	ADJUSTMENT PARTS
4.	RESULT
5.	REMARKS

1	PB LEVEL (TAPE I)
1.	315Hz (AT-750773)
2.	PB
3.	VR3 (Lch), VR3b (Rch)
4.	−6.0 ± 0.2dBm

2	PB LEVEL (TAPE II)
1.	315Hz (AT-750773)
2.	PB
3.	VR4 (Lch), VR4b (Rch)
4.	−0.6 ± 0.2dBm

7	TAPE SPEED
1.	3150Hz (AT751263)
2.	NORMAL PB SPEED
3.	VR501
4.	3150Hz ± 5Hz
5.	ONLY TAPE I

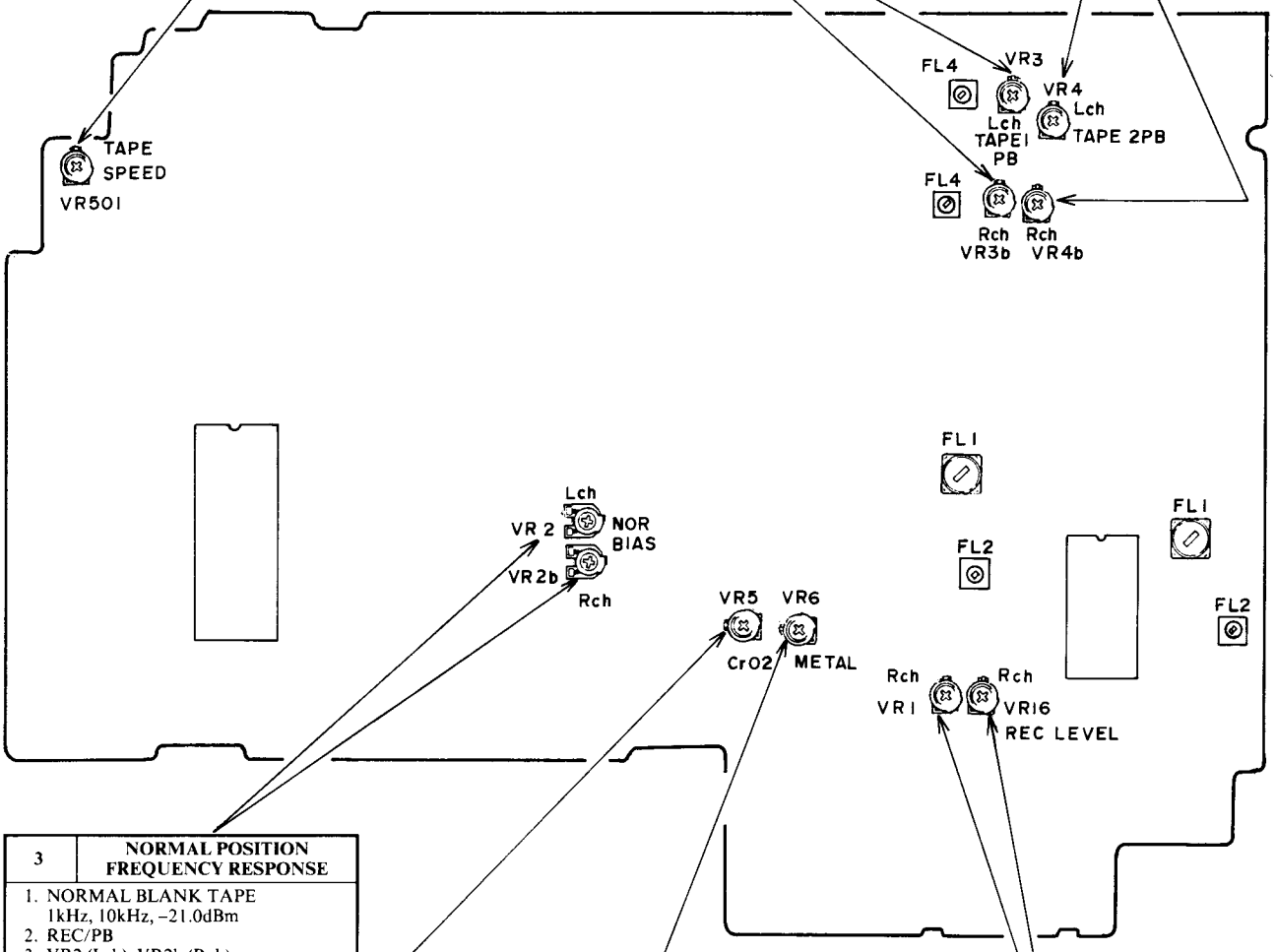


Fig. 6-1

3	NORMAL POSITION FREQUENCY RESPONSE
1.	NORMAL BLANK TAPE 1kHz, 10kHz, −21.0dBm
2.	REC/PB
3.	VR2 (Lch), VR2b (Rch)
4.	−21.0 ± 0.3dBm (1kHz, 10kHz)

4	CrO_2 POSITION FREQUENCY RESPONSE
1.	CrO_2 BLANK TAPE, 1kHz, 10kHz, −21.0dBm
2.	REC/PB
3.	VR5
4.	−21.0 ± 0.3dBm (1kHz, 10kHz)

5	METAL POSITION FREQUENCY RESPONSE
1.	METAL BLANK TAPE, 1kHz, 10kHz, −21.0dBm
2.	REC/PB
3.	VR6
4.	−21.0 ± 0.3dBm (1kHz, 10kHz)

6	REC LEVEL
1.	NORMAL BLANK TAPE, 315kHz, −6.0 ± 0.2dBm
2.	REC/PB
3.	VR1 (Lch), VR1b (Rch)
4.	−6.0 ± 0.2dBm

NOTES: ALL ADJUSTMENT ARE WITHOUT DOLBY.
USE THE FOLLOWING CASSETTE MEASURING TAPES:
NORMAL TAPE : MAXELL UD-123
CrO_2 TAPE : TDK AC-512
METAL TAPE : TDK AC-712

VII. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	SP CS ANGLE ADJUST

- SP (Service Parts) Classification
- A small "x" indicates that this part is not shown in the Photo or Illustration.
- This number corresponds with the individual parts index number in that figure.
- This number corresponds with the Figure Number.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
6-C1B	EC-350949	C MMY V 223M 250DC [J]
6-C1C	EC-338397	C MMY V 223M 125AC [C,A]
6-X1	EI-318384	OSC X'TAL NC-18C

- Symbols for primary destination
  [A]: AAL(U.S.A.) [S]: SAA(Australia)
  [B]: BEAB(England) [U]: U/T(Universal Area)
  [C]: CSA(Canada) [V]: VDE(W. Germany)
  [E]: CEE(Europe) [Y]: Custom Version
  [J]: JPN(Japan)
- SP (Service Parts) Classification
- These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

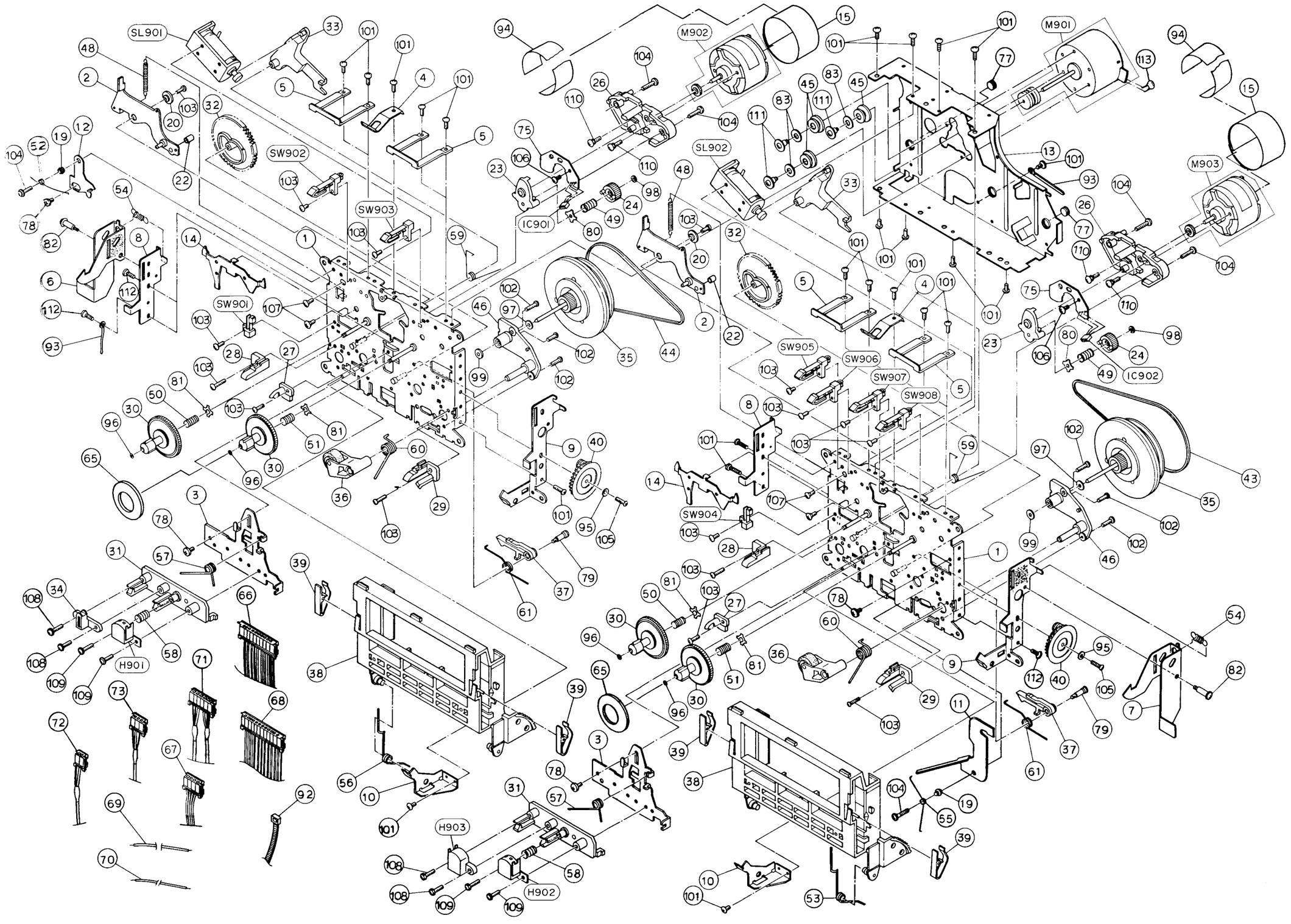
⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT

RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.		PART NO.	DESCRIPTION
1	N	BB-366591	MECHA AKI-8000Y BLK
2		BT-366563	⚠TRANS POWER T2091 [C, A]
3		BT-366565	⚠TRANS POWER T2091 [B, S]
4		BT-366564	⚠TRANS POWER T2091 [E, V]
5		BT-366562	⚠TRANS POWER T2091 [J]
6		BT-366561	⚠TRANS POWER T2091 [U]
7		ED-330319	⚠D SILICON DBA10B 100/1.0A
8		ED-369669	D LED GL-1EG111 GREEN
9		ED-369668	D LED GL-1HD111 RED
10		ED-366799	D LED LC-204MBE GREEN
11		ED-366621	D LED SLH-56MC3 GREEN
12		ED-366620	D LED SLH-56VC3 RED
13		ED-349662	D SILICON DS135E-FA6 F10 100/1.0A
14		ED-301911	D SILICON H DS448
15		ED-344280	D SILICON H GMA-01-FY2 F05
16		ED-330989	D ZENER H HZ11 B2
17		ED-346611	D ZENER H HZ11 B3
18		ED-323836	D ZENER H HZ16 2
19		ED-337776	D ZENER H HZ3 C1
20		ED-337267	D ZENER H HZ4 A1
21		ED-346599	D ZENER H HZ4 C3
22		ED-337265	D ZENER H HZ6 C2
23		ED-331667	D ZENER H HZ7 A1
24		EF-355226	⚠ FUSE BET T 1.00A 250V
25		EF-355374	⚠ FUSE BET T 500MA 250V
26		EF-623103	⚠ FUSE SEMKO T 1.00A 250V
27		EF-593706	⚠ FUSE SEMKO T 500MA 250V
28		EF-306949	⚠ FUSE TSC A 250V 1.25A
29		EF-309388	⚠ FUSE TSC A 250V 800MA
30		EF-309392	⚠ FUSE TSC 125V 1.25A
31		EF-309391	⚠ FUSE TSC 125V 800MA
32		EH-336776	FILTER DB D07003K 100kHz
33		EH-354528	FILTER DB FX-100B
34		EH-359984	FILTER DOLBY T2089
35		EI-361561	IC BA3402SP
36		EI-330352	IC BA6109
37		EI-359985	IC CX20187
38		EI-355388	IC IR2E27
39		EI-337008	IC LC7800
40		EI-357498	IC μ51143AL
41	N	EI-337228	IC μ5218L
42		EI-366584	IC UPD75104
43		EI-349372	OSC CE CSA4.00MG 4MHz
44		EO-356809	COIL FIX 1 100Z-121 100.00KC
45		ER-348272	⚠ R FUSE ERD2FC S10 1/4W 12ROG
46		ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
47		ER-318248	⚠ R FUSE ERD2FC S10 1/4W 47ROG
48		ES-358581	⚠ SW PUSH J-U3065 01-1
49		ES-359606	⚠ SW SELECTOR 8T-41S0454 01-4 [U]
50		ES-369959	SW SLIDE SSS41076B 1-01-04
51		ES-349474	SW TACT SKHHAM004A
52		ET-363953	TR DTA114TS
53		ET-353897	TR DTC114ES
54		ET-366589	TR UN1124
55		ET-308472	TR 2SA1115 E,F,G F05
56		ET-355626	TR 2SA992 E,F
57		ET-352334	TR 2SB774 Q,R,S,T
58		ET-347143	TR 2SC1845 E,F
59		ET-328435	TR 2SC2021 R,S
60		ET-308977	TR 2SC2274K F F05
61		ET-349705	TR 2SC2320 E,F,G
62		ET-349272	TR 2SC3242A E,F F05
63		ET-357845	TR 2SC3242A F,G F05
64		ET-349081	TR 2SC3383 S,T
65		ET-350795	TR 2SC3399 F05
66		ET-349366	TR 2SC3402 F05
67		ET-347961	TR 2SD1012-V G F05
68		ET-366581	TR 2SD1762 E,F
69		ET-310148	TR 2SD612K E,F
70		EV-344109	R S-FIX H RVF8P01 3P 102
71		EV-337996	R S-FIX H RVF8P01 3P 104
72		EV-345781	R S-FIX H RVF8P01 3P 202
73		EV-337993	R S-FIX H RVF8P01 3P 203
74		EV-337992	R S-FIX H RVF8P01 3P 502
75		EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
76		EV-366583	VR SLIDE VJ3013-2PVN5B-15A 503

MECHA BLOCK


SL901
SW902
SW903
SW901
H901
H903
H902
M902
IC901
SL902
M901
M903
SW905
SW906
SW907
SW908
SW904
IC902

1. MECHA BLOCK

REF. NO.	PART NO.	DESCRIPTION
1-1	BB-366591	MECHA AKI-8000Y BLK
1-23	MI-715949	IDLER ARM ASSY
1-24	MZ-715952	GEAR IDLER
1-30	ZG-715975	SP LOCK ARM
1-32	MZ-715962	GEAR PLAY
1-33	ML-715963	ARM PL
1-34	MS-715941	TAPE GUIDE
1-35	BF-718504	FLYWHEEL BLK (Y)
1-36	BL-715968	PINCH ROLLER ASSY (R)
1-37	ML-715987	ARM BRAKE
1-38	BC-718507	CASE LID
1-39	ZG-712816	CLAMP CASSETTE
1-40	TC-715979	DAMPER ASSY
1-43	MB-718505	BELT CAPSTAN (YB)
1-44	MB-718506	BELT CAPSTAN (YG)
1-46	MZ-715947	HOUSING ASSY (R)
1-49	ZG-715953	SP CLUTCH
1-50	ZG-715956	SP REEL
1-51	ZG-715960	SP REEL (C)
1-53	ZG-718508	SP CASE (R)
1-56	ZG-715978	SP TORSION
1-57	ZG-718509	SP HEAD CHASSIS (F)
1-58	ZG-749268	SP HEAD
1-59	ZG-715964	SP ARM PL
1-60	ZG-715969	SP PINCH ROLLER (R)
1-61	ZG-715988	SP BRAKE
1-65	MZ-718510	MAGNET REEL
1-80	ZW-715951	WASHER IDLER
1-81	ZW-715955	WASHER REEL
1-96	ZW-715984	PW16×035×050PSL
1-97	ZW-712292	PW21×050×040 PLS
1-98	ZW-718513	PW17×035×050PSL
1-99	ZW-718515	PW19×050×050NYL
1-108	ZS-715985	BID20×11
1-109	ZS-715986	BID20×10 W/WASHER
1-H901,902	HP-712824	HEAD R/P HY424528 SVK
1-H903	HE-337047	HEAD E HAJAB3040A C
1-IC901	EI-715093	IC DN6851
1-IC902	EI-715093	IC DN6851
1-M901	BM-718511	MOTOR BLK W/PULLEY EG500YD-2B
1-M902,903	BM-718512	MOTOR BLK W/GEAR RF510T-12620
1-SL901,902	EP-715946	SOLENOID
1-SW901	ES-715981	SW LEAF LSA-1120Y
1-SW902,903	ES-715980	SW LEAF MSW-1537N
1-SW904	ES-715981	SW LEAF LSA-1120Y
1-SW905 to 908	ES-715980	SW LEAF MSW-1537N

Note: Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

2. PC BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1	BA-T2091A050B	PC PRE & SYSCON BLK HX-A451W [J,C,A]
2-1A	BA-T2091A050A	PC PRE & SYSCON BLK HX-A451W [U,E,B,S]
2-2	BA-T2091A060A	PC COUNTER BLK HX-A451W

Note: PC PRE & SYSCON BLK consists of PRE & SYSCON PCB, REC VR PCB, HEAD PHONE PCB, METER PCB, POWER SW PCB, HEAD PHONE J PCB.

PC COUNTER BLK consists of OPERATION PCB, IND (1) PCB, IND (2) PCB.

3. PRE & SYSCON PC BOARD

REF. NO.	PART NO.	DESCRIPTION
		PRE & SYSCON PC BOARD
3-C25	EC-310834	C MC V FM 680J 500DC
3-C38	EC-347247	C MC V F05 FM 101J 500DC
3-C39	EC-327443	C PP V F10 APH 152J 630DC
3-C52	EC-315969	C EC V CUT AS1 102M 6.3DC
3-C60	EC-427948	C MC V FM 100J 500DC
3-C70	EC-347168	C MC V F05 FM 2ROD 500DC
3-C510	EC-316231	C EC V CUT AS1 222M 35.0DC
3-C513	EC-322420	C EC V CUT AS1 332M 25.0DC
3-C514	EC-316188	C EC V CUT SM 102M 25DC
3-C518	EC-201648	C EC V CUT SM 332M 10DCC
3-D1	ED-330989	D ZENER H HZ11 B2
3-D2	ED-344280	D SILICON H GMA-01-FY2 F05
3-D3	ED-337776	D ZENER H HZ23 C1
3-D501	ED-346599	D ZENER H HZ4 C3
3-D502	ED-337265	D ZENER H HZ6 C2
3-D503	ED-344280	D SILICON H GMA-01-FY2 F05
3-D504	ED-346599	D ZENER H HZ4 C3
3-D505	ED-337265	D ZENER H HZ6 C2
3-D506	ED-323836	D ZENER H HZ16 2
3-D507	ED-330319	⚠ D SILICON DBA10B 100/1.0A
3-D508,509	ED-349662	D SILICON DS135E-FA6 F10 100/1.0A
3-D510	ED-331667	D ZENER H HZ7 A1
3-D511	ED-330319	⚠ D SILICON DBA10B 100/1.0A
3-D512	ED-346611	D ZENER H HZ11 B3
3-D513	ED-301911	D SILICON H DS448
3-D514	ED-331667	D ZENER H HZ7 A1
3-D515,516	ED-301911	D SILICON H DS448
3-D517,518	ED-349662	D SILICON DS135E-FA6 F10 100/1.0A
3-D520	ED-337267	D ZENER H HZ4 A1
3-FL1	EH-354528	FILTER DB FX-100B
3-FL2	EH-359984	FILTER DOLBY T2089
3-FL3	EO-356809	COIL FIX 1 100Z-121 100.00KC
3-FL4	EH-336776	FILTER DB D07003K 100kHz
3-FR1,2	ER-318248	⚠ R FUSE ERD2FC S10 1/4W 47ROG
3-FR501,502	ER-348272	⚠ R FUSE ERD2FC S10 1/4W 12ROG
3-FR503	ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
3-IC1	EI-337228	IC μ5218L
3-IC2	EI-359985	IC CX20187
3-IC3	EI-337228	IC μ5218L
3-IC4	EI-361561	IC BA3402SP
3-IC5 to 7	EI-337228	IC μ5218L
3-IC8	EI-357498	IC μ51143AL
3-IC501	EI-366584	IC UPD75104
3-IC502	EI-337008	IC LC7800
3-IC503,504	EI-330352	IC BA6109
3-J1	EJ-347664	PIN J YKC21-5053 P 4P
3-J504	EJ-346076	DIN J TCS4690-01-1111 P 8P
3-L1	EO-362180	COIL FIX 3 7141 TAP 822J/332J
3-R560,561	ER-366592	⚠ R OMF H S20 FS 3W 360J
3-TR1 to 3	ET-349366	TR 2SC3402 F05
3-TR4 to 8	ET-349705	TR 2SC2320 E,F,G
3-TR9,10	ET-308977	TR 2SC2274K F F05
3-TR11 to 17	ET-349705	TR 2SC2320 E,F,G
3-TR18,19	ET-347143	TR 2SC1845 E,F
3-TR20,21	ET-349705	TR 2SC2320 E,F,G
3-TR22	ET-355626	TR 2SA992 E,F
3-TR23,24	ET-349705	TR 2SC2320 E,F,G
3-TR25,26	ET-349366	TR 2SC3402 F05
3-TR27 to 31	ET-349705	TR 2SC2320 E,F,G
3-TR32	ET-366581	TR 2SD1762 E,F
3-TR33	ET-349705	TR 2SC2320 E,F,G
3-TR34 to 37	ET-308472	TR 2SA1115 E,F,G F05
3-TR40	ET-349366	TR 2SC3402 F05
3-TR501	ET-350795	TR 2SC3399 F05
3-TR502	ET-308472	TR 2SA1115 E,F,G F05
3-TR503	ET-353897	TR DTC114ES
3-TR504	ET-310148	TR 2SD612K E,F
3-TR505	ET-308472	TR 2SA1115 E,F,G F05
3-TR506	ET-357845	TR 2SC3242A F,G F05
3-TR507	ET-347961	TR 2SD1012-V G F05
3-TR508	ET-363953	TR DTA114TS
3-TR509 to 512	ET-349366	TR 2SC3402 F05
3-TR513	ET-363953	TR DTA114TS
3-TR514	ET-347961	TR 2SD1012-V G F05
3-TR515	ET-308472	TR 2SA1115 E,F,G F05
3-TR516	ET-357845	TR 2SC3242A F,G F05
3-TR517	ET-352334	TR 2SB774 Q,R,S,T
3-TR518	ET-350795	TR 2SC3399 F05
3-TR519	ET-352334	TR 2SB774 Q,R,S,T
3-TR520	ET-350795	TR 2SC3399 F05
3-TR521	ET-349081	TR 2SC3383 S,T
3-TR522	ET-366581	TR 2SD1762 E,F
3-TR523	ET-308472	TR 2SA1115 E,F,G F05
3-TR524	ET-349272	TR 2SC3242A E,F F05
3-TR525,526	ET-308141	TR 2SC2603 G F05
3-TR527	ET-366581	TR 2SD1762 E, F
3-T1	EO-366580	COIL OSC 1 32-5038-12 100kHz
3-VR1	EV-337993	R S-FIX H RVF8P01 3P 203
3-VR2	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
3-VR3,4	EV-337996	R S-FIX H RVF8P01 3P 104
3-VR5	EV-337992	R S-FIX H RVF8P01 3P 502
3-VR6	EV-344109	R S-FIX H RVF8P01 3P 102
3-VR501	EV-345781	R S-FIX H RVF8P01 3P 202
3-X501	EI-349372	OSC CE CSA4.00MG 4MHz
		ASSEMBLY BLOCK
3-F501	EF-309388	⚠ FUSE TSC A 250V 800MA [U,J]
3-F501A	EF-309391	⚠ FUSE TSC 125V 800MA [C, A]
3-F501B	EF-593706	⚠ FUSE SEMKO T 500MA 250V [E,S]
3-F501C	EF-355374	⚠ FUSE BET T 500MA 250V [B]
3-F502	EF-306949	⚠ FUSE TSC A 250V 1.25A [U,J]
3-F502A	EF-309392	⚠ FUSE TSC 125V 1.25A [C,A]
3-F502B	EF-623103	⚠ FUSE SEMKO T 1.00A 250V [E,S]
3-F502C	EF-355226	⚠ FUSE BET T 1.00A 250V [B]

4. METER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
4-D301 to 303	ED-366621	D LED SLH-56MC3 GREEN
4-D304,305	ED-366620	D LED SLH-56VC3 RED
4-IC301	EI-355388	IC IR2E27
4-R301	ER-325843	⚠ R OMF H S15 FS 1W 391J
4-R302	ER-353317	⚠ R OMF H S15 FS 1W 681J

5. COUNTER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
5-D1,2	ED-369668	D LED GL-1HD111 RED
5-D3 to 7	ED-344280	D SILICON H GMA-01-FY2 F05
5-D8	ED-366799	D LED LC-204MBE GREEN
5-D9 to 11	ED-344280	D SILICON H GMA-01-FY2 F05
5-SW1 to 3	ES-369959	SW SLIDE SSSS41076B 1-01-04
5-TR1 to 7	ET-328435	TR 2SC2021 R,S
5-TR8 to 12	ET-366589	TR UN1124
5-TS4 to 22	ES-349474	SW TACT SKHHAM004A

6. REC VR PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-VR101	EV-366583	VR SLIDE VJ3013-2PVN5B-15A 503

7. MECHA II OPERATION PC BOARD

REF. NO.	PART NO.	DESCRIPTION
7-D9	ED-369668	D LED GL-1HD111 RED
7-D10	ED-369669	D LED GL-1EG111 GREEN
7-TS23 to 28	ES-349474	SW TACT SKHHAM004A

8. MECHA I OPERATION PC BOARD

REF. NO.	PART NO.	DESCRIPTION
8-D11	ED-369669	D LED GL-1EG111 GREEN
8-TS29 to 32	ES-349474	SW TACT SKHHAM004A

9. HEAD PHONE PC BOARD

REF. NO.	PART NO.	DESCRIPTION
9-J201	EJ-358901	PHONE J 3P HLJ0541-010 W/NUT 6.3

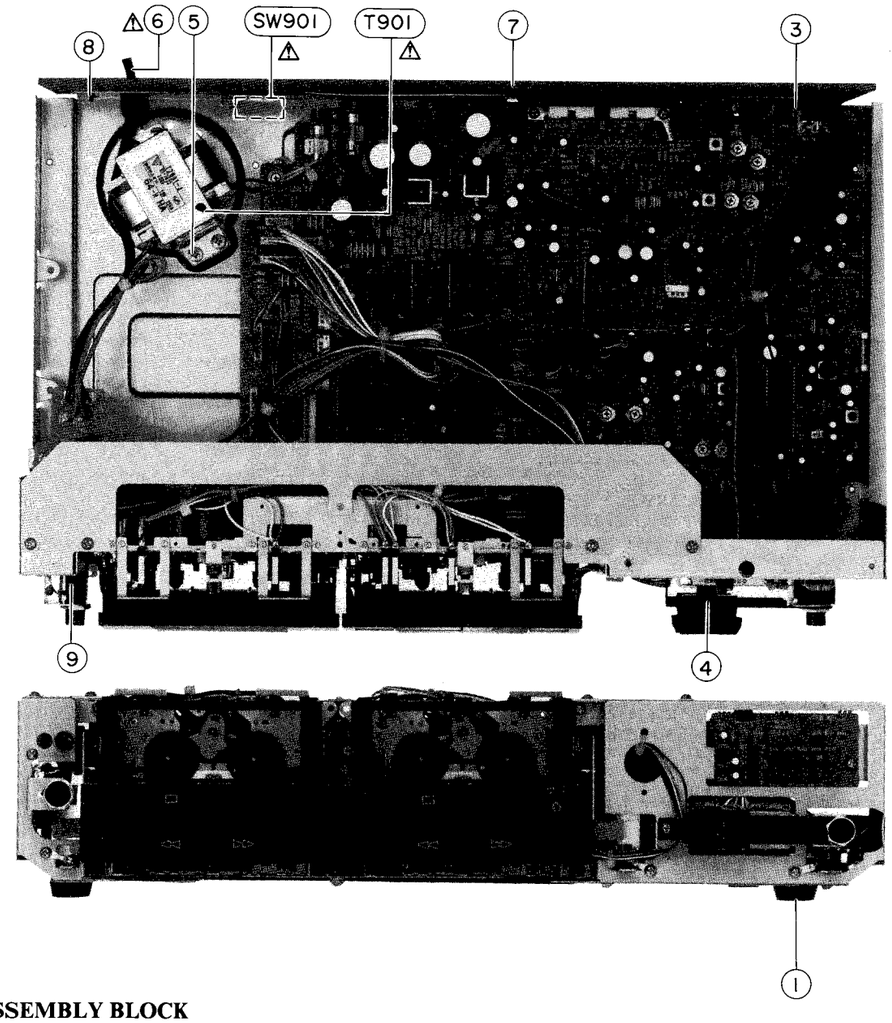
10. JACK PC BOARD

REF. NO.	PART NO.	DESCRIPTION
10-J101	EJ-366582	PHONE J 9P HLJ4308-3010 W/NUT 6.3

11. POWER SW PC BOARD

REF. NO.	PART NO.	DESCRIPTION
11-C520	EC-320548	⚠ C CE V F 103Z 250AC [J,C,A]
11-C520A	EC-338411	⚠ C CE V FZ 103P 400AC [U,E,B,S]
11-SW501	ES-358581	⚠ SW PUSH J-U3065 01-1

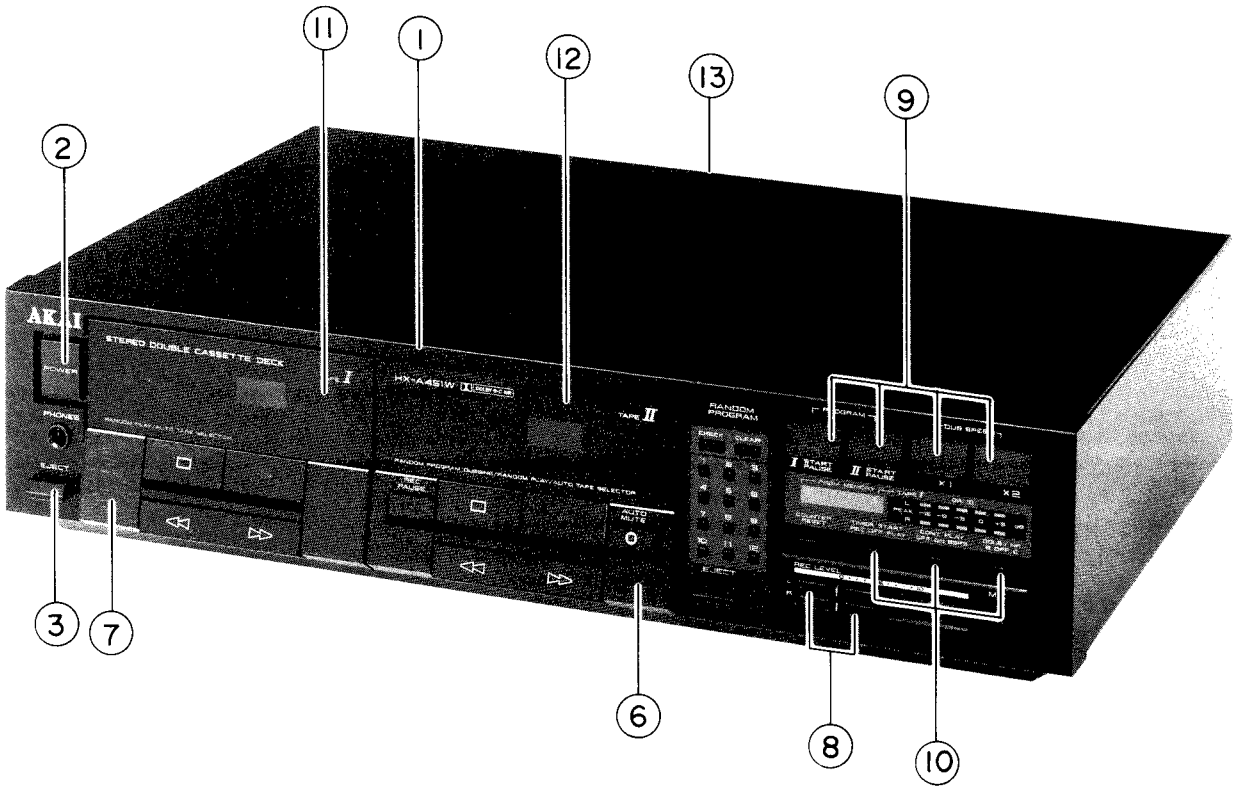
ASSEMBLY BLOCK



12. ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
12-1	SA-202118	FOOT
12-2	ZS-351186	ST BR30×08STL CMT C080 (FOOT FIX)
12-3	ZW-698308	RV NYL30×055 BL
12-4	ML-359930	LEVER REC VR
12-5	ZS-304022	ST PAN40×06STL CMT (TRANS POWER FIX)
12-6	EW-347604	⚠ AC CORD 2 CORES VM1165B J [J]
12-6A	EW-347683	⚠ AC CORD 2 CORES VM0129, VFF-CB U/T [U]
12-6B	EW-347607	⚠ AC CORD 2 CORES VM0238, SPT-1CB UC [C,A]
12-6C	EW-347682	⚠ AC CORD 2 CORES VM0364, FC3097-CB EV [E]
12-6D	EW-347680	⚠ AC CORD 2 CORES LCFL2×0.75-CB B [B]
12-6E	EW-347681	⚠ AC CORD 2 CORES VM0436, FC3093-CB S [S]
12-7	SP-355354P	PANEL REAR BOARD HX-A451W [J]
12-7A	SP-355354N	PANEL REAR BOARD HX-A451W [U]
12-7B	SP-355354Q	PANEL REAR BOARD HX-A451W [C,A]
12-7C	SP-355354R	PANEL REAR BOARD HX-A451W [E,V]
12-7D	SP-355354S	PANEL REAR BOARD HX-A451W [B,S]
12-8	ZS-352120	T2BR30×08STL BCM C080 (PANEL REAR FIX)
12-9	MZ-365015	JOINT POWER SW
12-10	ZS-325495	T2BR30×06STL CMT (COVER UPPER FIX)
12-SW901	ES-359606	⚠ SW SELECTOR 8T-41S0454 01-4 [U]
12-T901	BT-366562	⚠ TRANS POWER T2091 [J]
12-T901A	BT-366561	⚠ TRANS POWER T2091 [U]
12-T901B	BT-366563	⚠ TRANS POWER T2091 [C,A]
12-T901C	BT-366564	⚠ TRANS POWER T2091 [E,V]
12-T901D	BT-366565	⚠ TRANS POWER T2091 [B,S]

FINAL ASSEMBLY BLOCK



13. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	PANEL FRONT BLOCK	
13-1	BD-T2091A020A	PANEL FRONT BLK HX-A451W
13-1-B	BD-T2091A020B	PANEL FRONT BLK HX-A451W-B
13-2	SK-343017C	KNOB POWER (2)
13-2-B	SK-343017F	KNOB POWER-B
13-3	SK-364993A	KNOB EJECT
13-3-B	SK-364993B	KNOB EJECT-B
13-4	ZG-349502	SP PUSH EJECT
13-5	SK-369006	KNOB RANDOM
	FINAL ASSEMBLY BLOCK	
13-6	SK-T2091A030A	KNOB OPERATE (1) BLK HX-A451W
13-6-B	SK-T2091A030B	KNOB OPERATE (1) BLK HX-A451W-B
13-7	SK-T2091A040A	KNOB OPERATE (2) BLK HX-A451W

13. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
13-7-B	SK-T2091A040B	KNOB OPERATE (2) BLK HX-A451W-B
13-8	SK-345270	KNOB REC CAP
13-9	SK-B364999A	KNOB PUSH PART
13-9-B	SK-B364999B	KNOB PUSH-B PART
13-10	SK-364997A	KNOB SLIDE
13-10-B	SK-364997B	KNOB SLIDE-B
13-11	BD-364998A	LID 1
13-12	BD-364998B	LID 2
13-13	SP-344591A	COVER UPPER
13-13-B	SP-344591D	COVER UPPER-B-(2)
13-14x	EW-344151	CORD RR-61A PINX2-PINX2

Note: PANEL FRONT BLOCK consists of 1-2 to 13-4.

SYMBOL FOR COLOR VARIATION

NON:STANDARD COLOR

– B:BLACK

INDEX

HX-A451W

PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.
BA-T2091A050A	2-1A	EH-336776	3-FL4	ET-308141	3-TR526	EV-337996	3-VR4
BA-T2091A050B	2-1	EH-354528	3-FL1	ET-308141	3-TR525	EV-337996	3-VR3
BA-T2091A060A	2-2	EH-359984	3-FL2	ET-308472	3-TR515	EV-344109	3-VR6
BB-366591	1-1	EI-330352	3-IC503	ET-308472	3-TR37	EV-345781	3-VR501
BC-718507	1-38	EI-330352	3-IC504	ET-308472	3-TR34	EV-366583	6-VR101
BD-T2091A020A	13-1	EI-337008	3-IC502	ET-308472	3-TR36	EW-344151	13-14x
BD-T2091A020B	13-1-B	EI-337228	3-IC5	ET-308472	3-TR502	EW-347604	12-6
BD-364998A	13-11	EI-337228	3-IC6	ET-308472	3-TR505	EW-347607	12-6B
BD-364998B	13-12	EI-337228	3-IC1	ET-308472	3-TR35	EW-347680	12-6D
BF-718504	1-35	EI-337228	3-IC3	ET-308472	3-TR523	EW-347681	12-6E
BL-715968	1-36	EI-337228	3-IC7	ET-308977	3-TR10	EW-347682	12-6C
BM-718511	1-M901	EI-349372	3-X501	ET-308977	3-TR9	EW-347683	12-6A
BM-718512	1-M903	EI-355388	4-IC301	ET-310148	3-TR504	HE-337047	1-H903
BM-718512	1-M902	EI-357498	3-IC8	ET-328435	5-TR6	HP-712824	1-H902
BT-366561	12-T901A	EI-359985	3-IC2	ET-328435	5-TR7	HP-712824	1-H901
BT-366562	12-T901	EI-361561	3-IC4	ET-328435	5-TR3	MB-718505	1-43
BT-366563	12-T901B	EI-366584	3-IC501	ET-328435	5-TR5	MB-718506	1-44
BT-366564	12-T901C	EI-715093	1-IC901	ET-328435	5-TR1	MI-715949	1-23
BT-366565	12-T901D	EI-715093	1-IC902	ET-328435	5-TR2	ML-359930	12-4
EC-201648	3-C518	EJ-346076	3-J504	ET-328435	5-TR4	ML-715963	1-33
EC-310834	3-C25	EJ-347664	3-J1	ET-347143	3-TR19	ML-715987	1-37
EC-315969	3-C52	EJ-358901	9-J201	ET-347143	3-TR18	MS-715941	1-34
EC-316188	3-C514	EJ-366582	10-J101	ET-347961	3-TR514	MZ-365015	12-9
EC-316231	3-C510	EO-356809	3-FL3	ET-347961	3-TR507	MZ-715947	1-46
EC-320548	11-C520	EO-362180	3-L1	ET-349081	3-TR521	MZ-715952	1-24
EC-322420	3-C513	EO-366580	3-T1	ET-349272	3-TR524	MZ-715962	1-32
EC-327443	3-C39	EP-715946	1-SL901	ET-349366	3-TR25	MZ-718510	1-65
EC-338411	11-C520A	EP-715946	1-SL902	ET-349366	3-TR40	SA-202118	12-1
EC-347168	3-C70	ER-318248	3-FR2	ET-349366	3-TR1	SK-B364999A	13-9
EC-347247	3-C38	ER-318248	3-FR1	ET-349366	3-TR3	SK-B364999B	13-9-B
EC-427948	3-C60	ER-318647	3-FR503	ET-349366	3-TR511	SK-T2091A030A	13-6
ED-301911	3-D516	ER-325843	4-R301	ET-349366	3-TR512	SK-T2091A030B	13-6-B
ED-301911	3-D513	ER-348272	3-FR501	ET-349366	3-TR2	SK-T2091A040A	13-7
ED-301911	3-D515	ER-348272	3-FR502	ET-349366	3-TR509	SK-T2091A040B	13-7-B
ED-323836	3-D506	ER-353317	4-R302	ET-349366	3-TR26	SK-343017C	13-2
ED-330319	3-D507	ER-366592	3-R560	ET-349366	3-TR510	SK-343017F	13-2-B
ED-330319	3-D511	ER-366592	3-R561	ET-349705	3-TR30	SK-345270	13-8
ED-330989	3-D1	ES-349474	5-TS5	ET-349705	3-TR4	SK-364993A	13-3
ED-331667	3-D514	ES-349474	5-TS9	ET-349705	3-TR21	SK-364993B	13-3-B
ED-331667	3-D510	ES-349474	5-TS11	ET-349705	3-TR24	SK-364997A	13-10
ED-337265	3-D502	ES-349474	5-TS13	ET-349705	3-TR27	SK-364997B	13-10-B
ED-337265	3-D505	ES-349474	5-TS18	ET-349705	3-TR33	SK-365006	13-5
ED-337267	3-D520	ES-349474	5-TS12	ET-349705	3-TR29	SP-344591A	13-13
ED-337766	3-D3	ES-349474	5-TS7	ET-349705	3-TR31	SP-344591D	13-13-B
ED-344280	3-D2	ES-349474	5-TS14	ET-349705	3-TR5	SP-355354N	12-7A
ED-344280	3-D503	ES-349474	5-TS16	ET-349705	3-TR7	SP-355354P	12-7
ED-344280	5-D3	ES-349474	5-TS15	ET-349705	3-TR11	SP-355354Q	12-7B
ED-344280	5-D4	ES-349474	5-TS22	ET-349705	3-TR14	SP-355354R	12-7C
ED-344280	5-D5	ES-349474	5-TS4	ET-349705	3-TR20	SP-355354S	12-7D
ED-344280	5-D6	ES-349474	5-TS6	ET-349705	3-TR17	TC-715979	1-40
ED-344280	5-D7	ES-349474	5-TS17	ET-349705	3-TR8	ZG-349502	13-4
ED-344280	5-D10	ES-349474	5-TS10	ET-349705	3-TR13	ZG-712816	1-39
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ED-344280	5-D11	ES-349474	5-TS21	ET-349705	3-TR28	ZG-715956	1-50
ED-346599	3-D504	ES-349474	5-TS16	ET-349705	3-TR23	ZG-715960	1-51
ED-346599	3-D501	ES-349474	5-TS8	ET-349705	3-TR6	ZG-715964	1-59
ED-346611	3-D512	ES-349474	5-TS20	ET-349705	3-TR12	ZG-715969	1-60
ED-349662	3-D508	ES-349474	7-TS24	ET-349705	3-TR16	ZG-715975	1-30
ED-349662	3-D509	ES-349474	7-TS23	ET-350795	3-TR520	ZG-715978	1-56
ED-349662	3-D518	ES-349474	7-TS25	ET-350795	3-TR518	ZG-715988	1-61
ED-349662	3-D517	ES-349474	7-TS27	ET-350795	3-TR501	ZG-718508	1-53
ED-366620	4-D304	ES-349474	7-TS26	ET-352334	3-TR519	ZG-718509	1-57
ED-366620	4-D305	ES-349474	7-TS28	ET-352334	3-TR517	ZG-749268	1-58
ED-366621	4-D301	ES-349474	8-TS32	ET-353897	3-TR503	ZS-304022	12-5
ED-366621	4-D302	ES-349474	8-TS29	ET-355626	3-TR22	ZS-325495	12-10
ED-366621	4-D303	ES-349474	8-TS31	ET-357845	3-TR516	ZS-351186	12-2
ED-366799	5-D8	ES-349474	8-TS30	ET-357845	3-TR506	ZS-352120	12-8
ED-369668	5-D1	ES-358581	11-SW501	ET-363953	3-TR508	ZS-715985	1-108
ED-369668	5-D2	ES-359606	12-SW901	ET-363953	3-TR513	ZS-715986	1-109
ED-369668	7-D9	ES-369959	5-SW1	ET-366581	3-TR32	ZW-698308	12-3
ED-369669	7-D10	ES-369959	5-SW2	ET-366581	3-TR527	ZW-712292	1-97
ED-369669	8-D11	ES-369959	5-SW3	ET-366581	3-TR522	ZW-715951	1-80
EF-306949	3-F502	ES-715980	1-SW908	ET-366589	5-TR11	ZW-715955	1-81
EF-309388	3-F501	ES-715980	1-SW907	ET-366589	5-TR10	ZW-715984	1-96
EF-309391	3-F501A	ES-715980	1-SW902	ET-366589	5-TR12	ZW-718513	1-98
EF-309392	3-F502A	ES-715980	1-SW903	ET-366589	5-TR8	ZW-718515	1-99
EF-355226	3-F502C	ES-715980	1-SW905	ET-366589	5-TR9		
EF-355374	3-F501C	ES-715980	1-SW906	EV-336785	3-VR2		
EF-593706	3-F501B	ES-715981	1-SW901	EV-337992	3-VR5		
EF-623103	3-F502B	ES-715981	1-SW904	EV-337993	3-VR1		

ABBREVIATIONS FOR SERVICE MANUAL (CASSETTE)

Abbreviation	Explanation	Abbreviation	Explanation
AC	Alternating Current	MICOM	MIcroCOMputer
A/D	Analog/Digital	MIN	MINute
AF	Auto Fader	MML	Maximum Modulation Level
A.M	Auto Mute	MOL	Maximum Output Level
AMP	AMPlifier	MPX	Multi Plex
AR	Anti Recording	NC	Not Connected (No Connection)
AT BIAS	Auto Tuning BIAS	NFB	Negative Feed Back
ATT	ATTenuator	NORM	NORMal
BAL	BALance	NR	Noise Reduction
BEF	Band Elimination Filter	OSC	OSCillator (OSCillation)
BSS	Blank Search System	P	Pulse
BSPS	Blank Skip Play System	PB	Play Back
CAP M	CAPsTan Motor	QMSS	Quick Memory Search System
CH	CHannel	QR	Quick Reverse
COMP	COMParator	R CH	Right CHannel
CONT	CONTinuance	REC	RECord (RECording)
CRLP	Computer Recording Level Processing	REV	REVerse
CS	Chip Select	ROT	ROTation
D/A	Digital/Analog	REW	REWind
DC	Direct Current	SEC	SECond
DET	DETector	SELE	SELEctor
DISCRI	DISCRIminator	SENS	SENSitivity
DUB	DUBbing	SEPP	Single Ended Push Pull
EQ	EQualizer	SIG	SIGnal
FF(or F.FWD)	Fast Forward	SPECT	SPECTrum
FLD	FLuorescent Display	STD	STanDard
FREQ	FREQuency	SW	SWitch
FWD	ForWarD	SYSCON	SYStem CONtrol
GND	GrouND	TP	Test Point
H	High	TRIG	TRIGa
HPF	High Pass Filter	VCA	Voltage Control Attenuator
IND	INDicator	VOL	VOLume
IPLS	Instant Program Location System	VOLT	VOLTage
L	Low	VR	Variable Resistor
L CH	Left CHannel	X'TAL	cysTAL
LED	Light Emitining Diode	X1	Normal speed
MEMO	MEMOry	X2	Dubble speed

AKAI ELECTRIC CO., LTD.

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TEL Tokyo (742) 5111 CABLE HIFIAKAI TOKYO TELEX J26261

Printed No. 860723-G1-2900 Printed Date: September 5, 1986

Printed in Japan

AKAI

MODEL HX-A451W

SCHEMATIC DIAGRAM AND PC BOARD

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3. CONNECTION DIAGRAM 3
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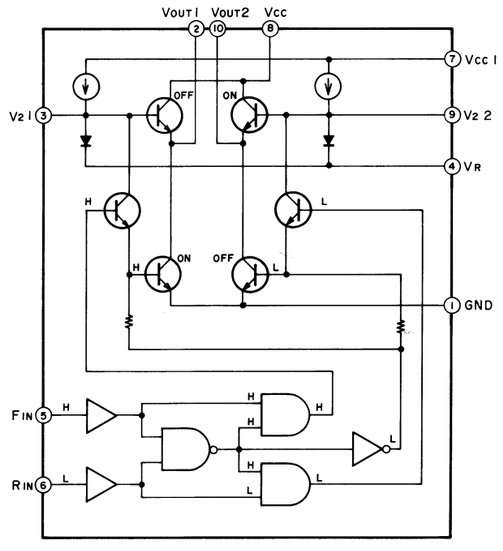
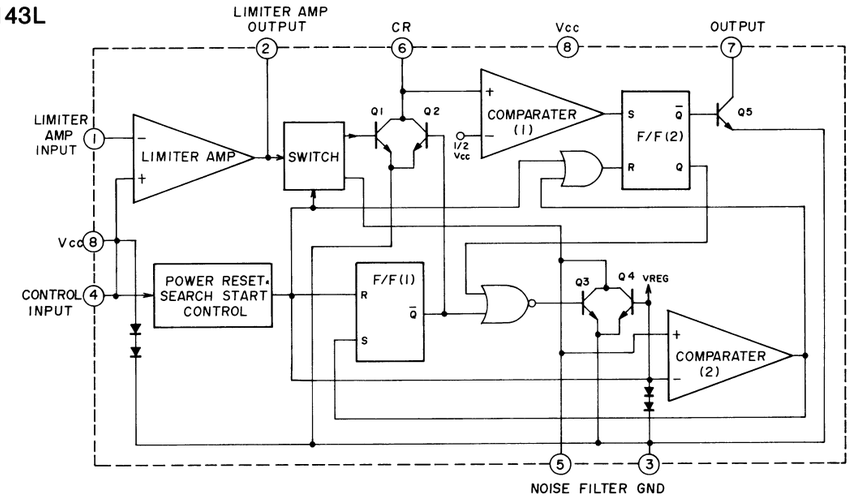
5. PRE & SYSCON PCB 5
6. BLOCK DIAGRAM 6

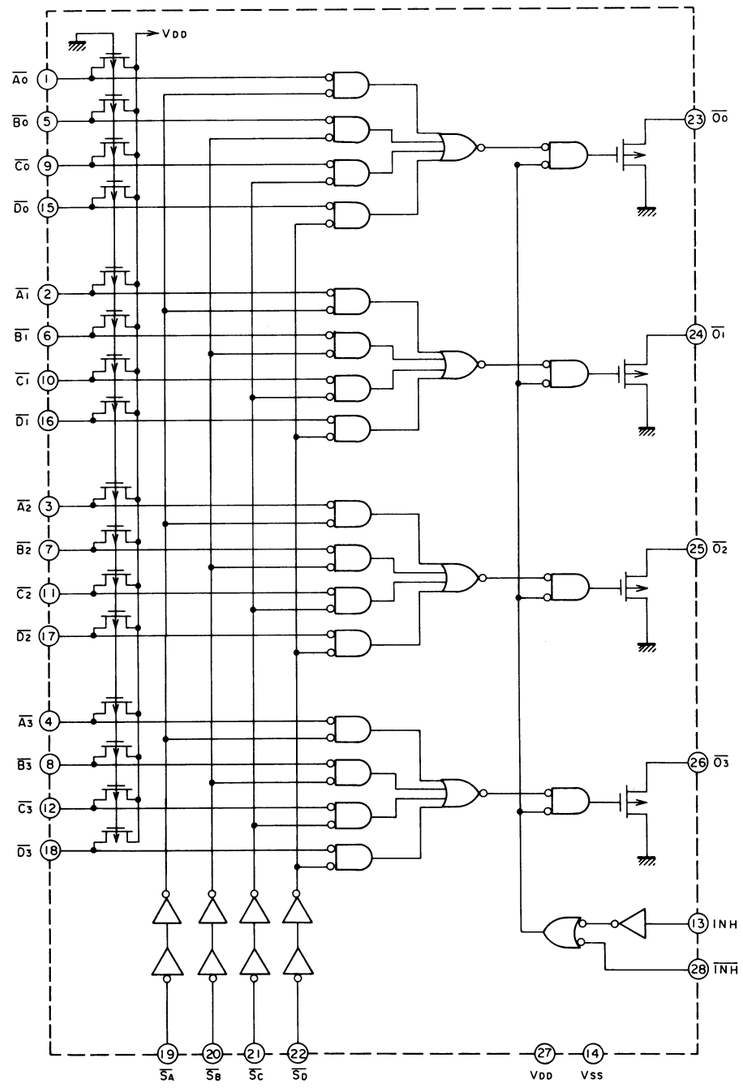
BA6019/BA6209

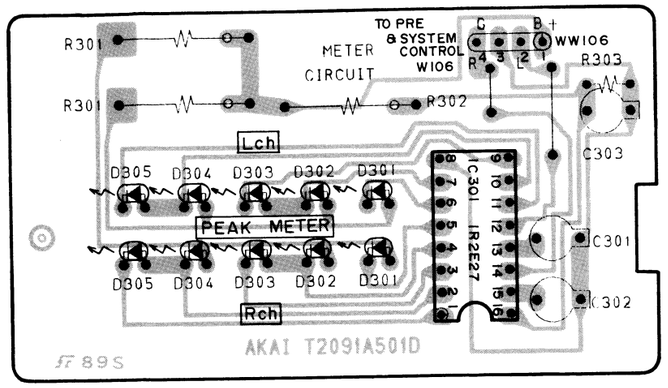


M51143L



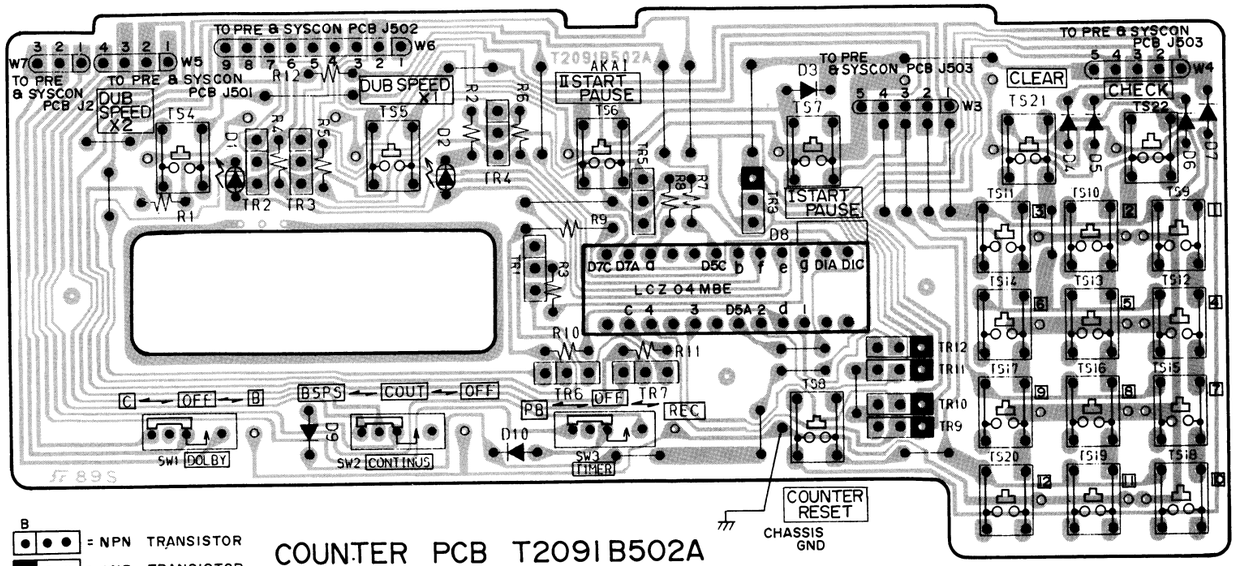
LC7800





METER PCB T2091A501D

メーター基板



B = NPN TRANSISTOR

B = PNP TRANSISTOR

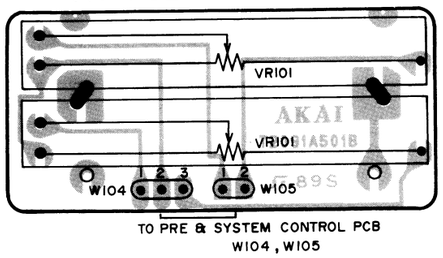
COUNTER PCB T2091B502A

カウンター基板

TR1, TR2, TR3, TR4, TR5, TR6,
TR7 ..... 2SC2021(Q,R)
TR8, TR9, TR10, TR11, TR12
..... UN1124

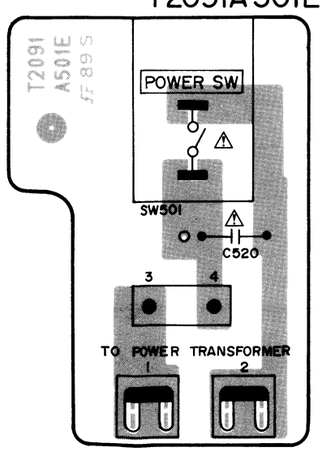
録音ボリューム基板

VR PCB T2091A501B



電源スイッチ基板

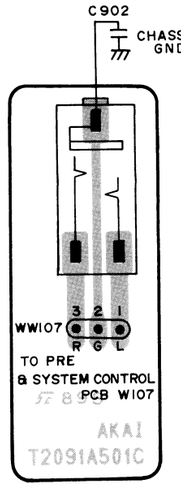
POWER SW PCB
T2091A501E



注意: ⚠の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

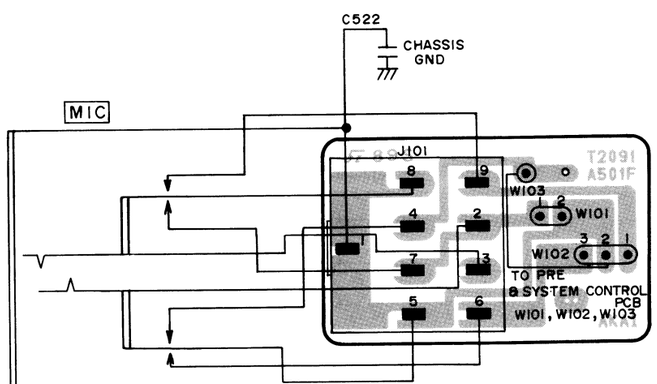
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.



HEAD PHONES PCB
T2091A501C

ヘッドホン基板

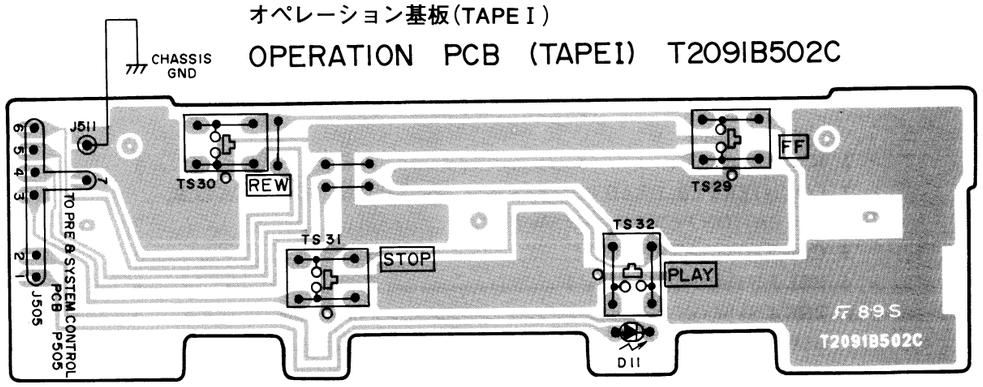


MIC JACK PCB
T2091A501F

マイクジャック基板

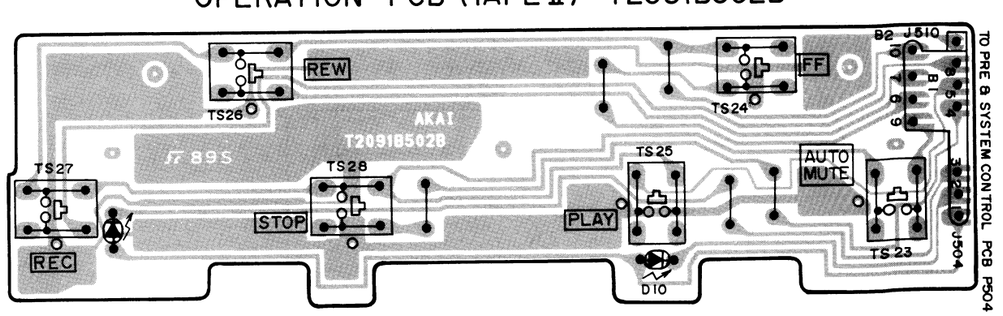
オペレーション基板(TAPE I)

OPERATION PCB (TAPEI) T2091B502C

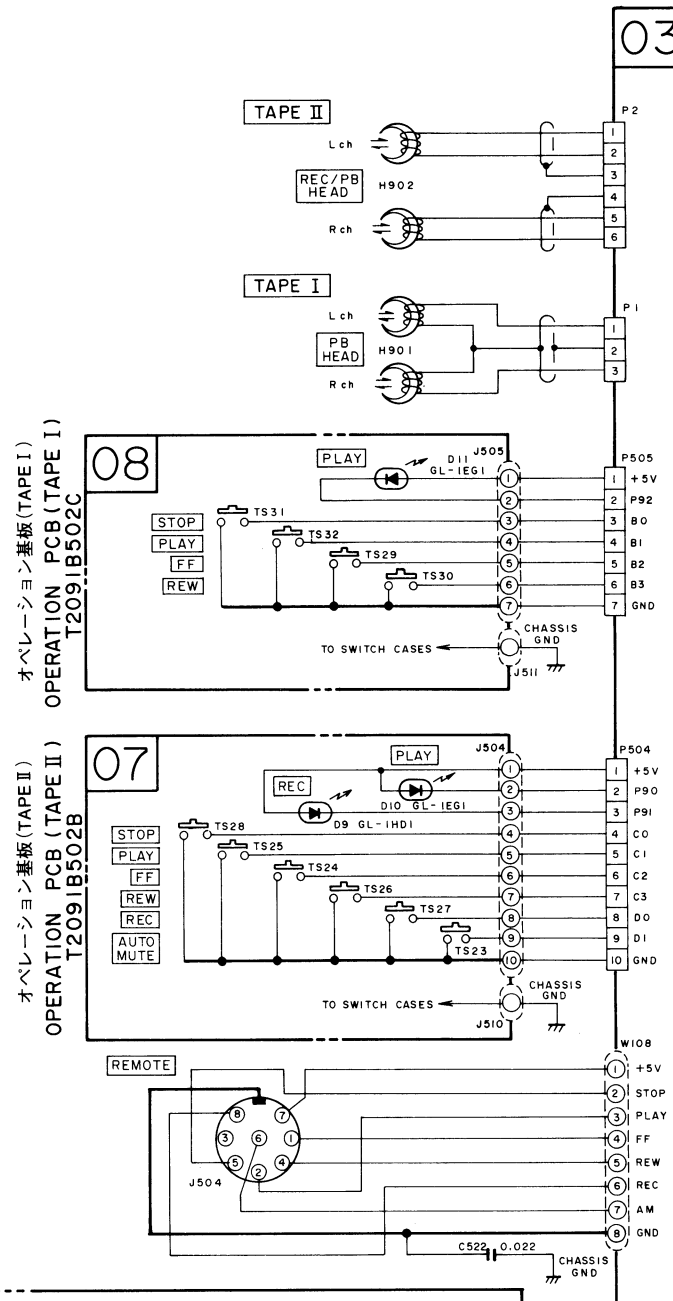


オペレーション基板(TAPE II)

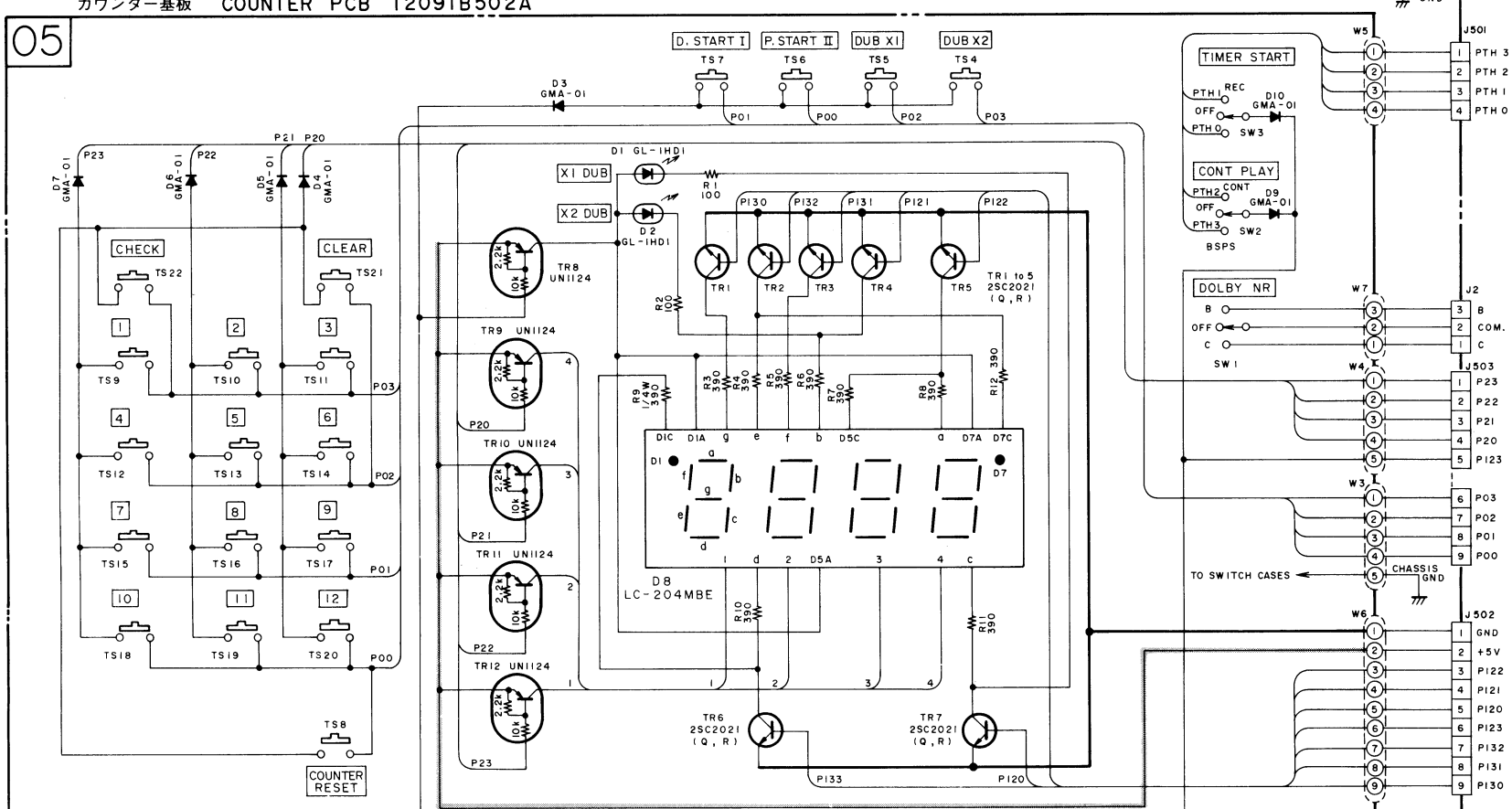
OPERATION PCB (TAPE II) T2091B502B

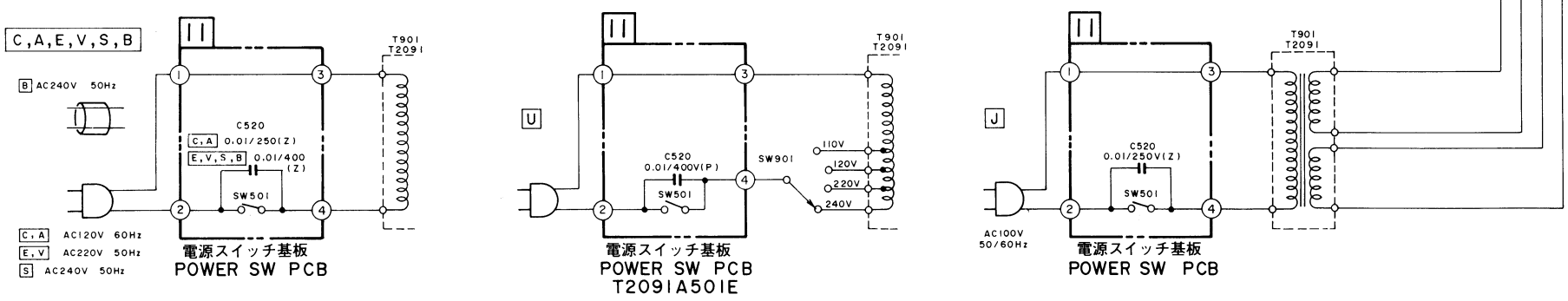


HX-A451W



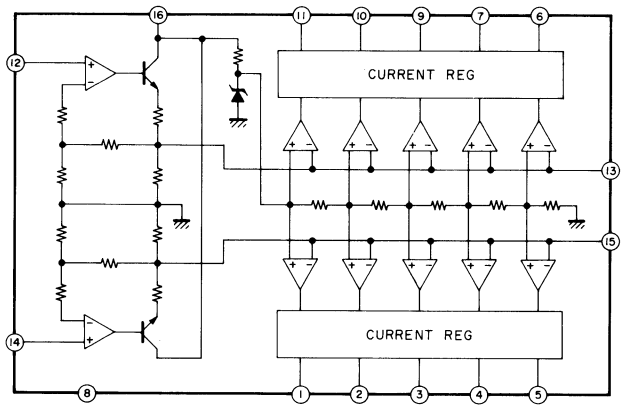
カウンター基板 COUNTER PCB T2091B502A



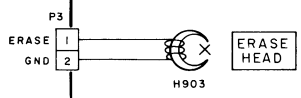


プリアンプ/システムコントロール基板
PREAMP AND SYSTEM CONTROL PCB
T2091A501A

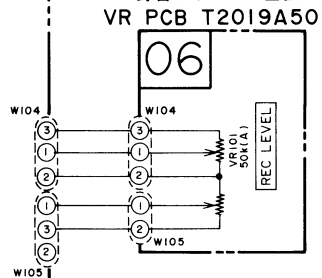
IR2E27A

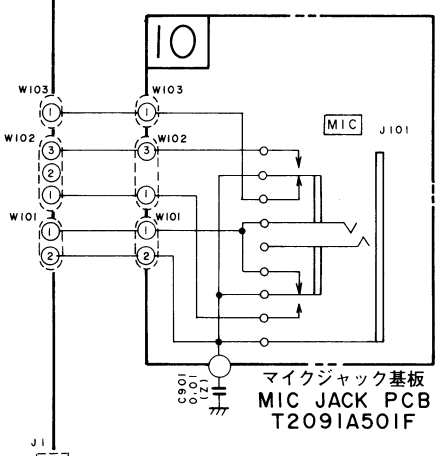


TAPE II

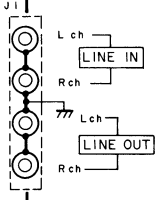


録音ボリューム基板
VR PCB T2019A501B

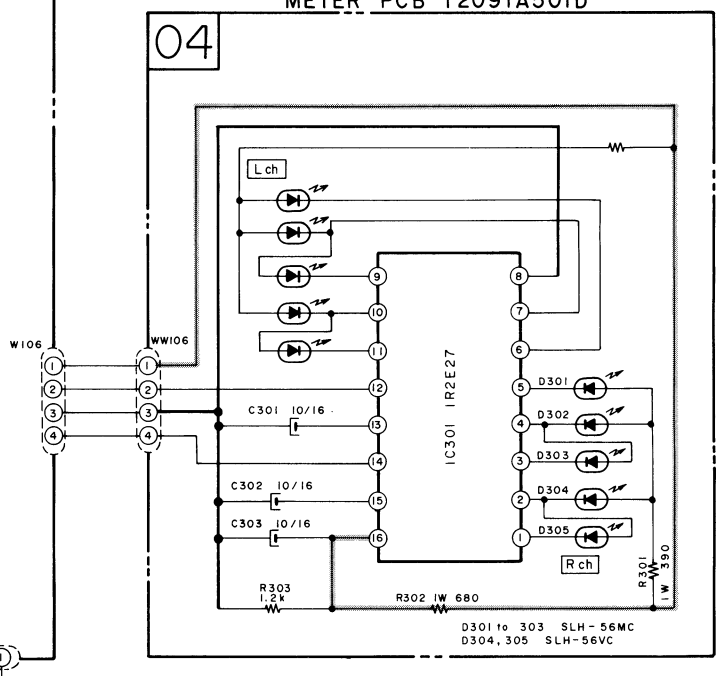




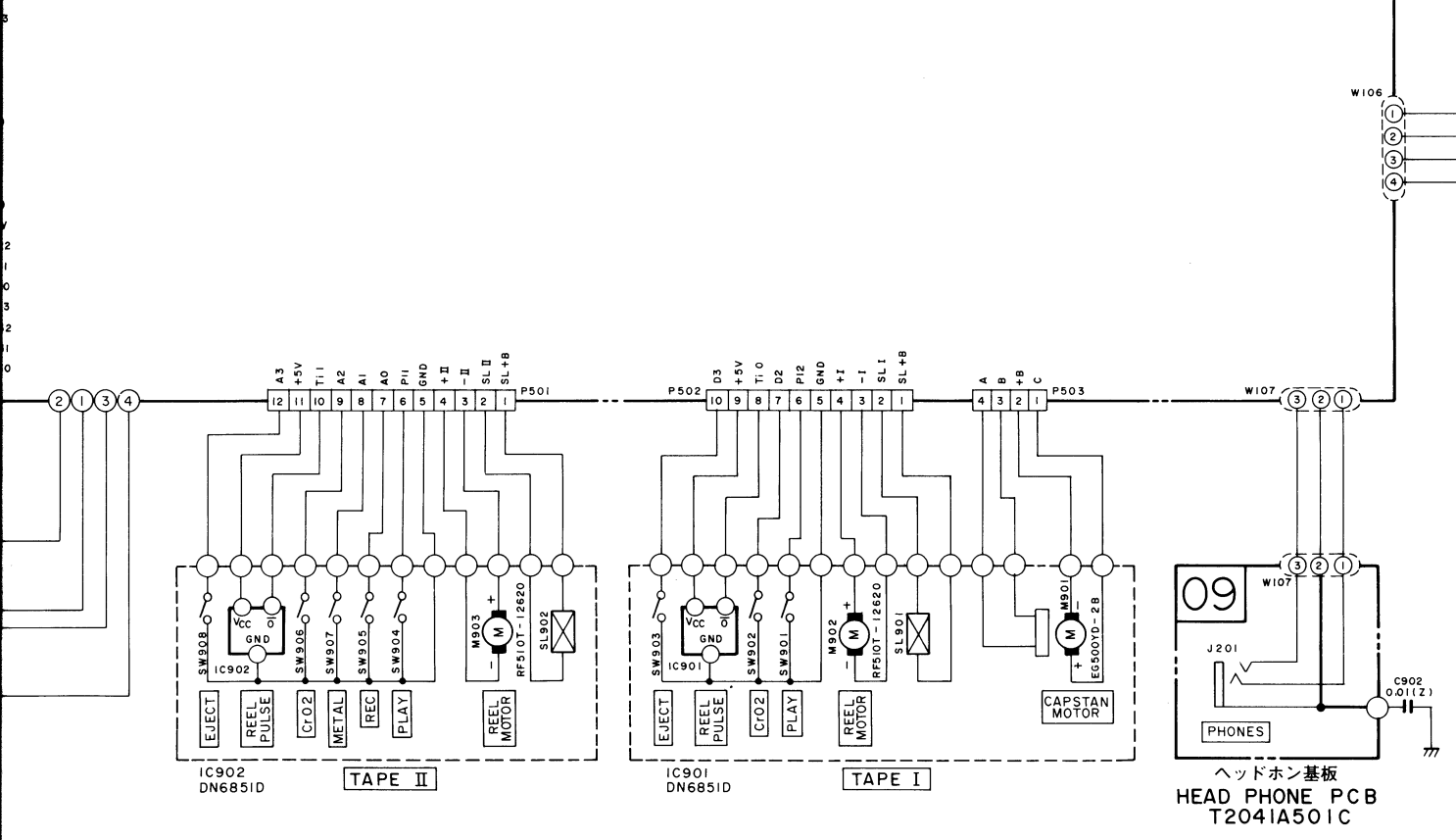
マイクジャック基板
MIC JACK PCB
T2091A501F



メーター基板
METER PCB T2091A501D



：B電源　B(POWER SUPPLY) PCB



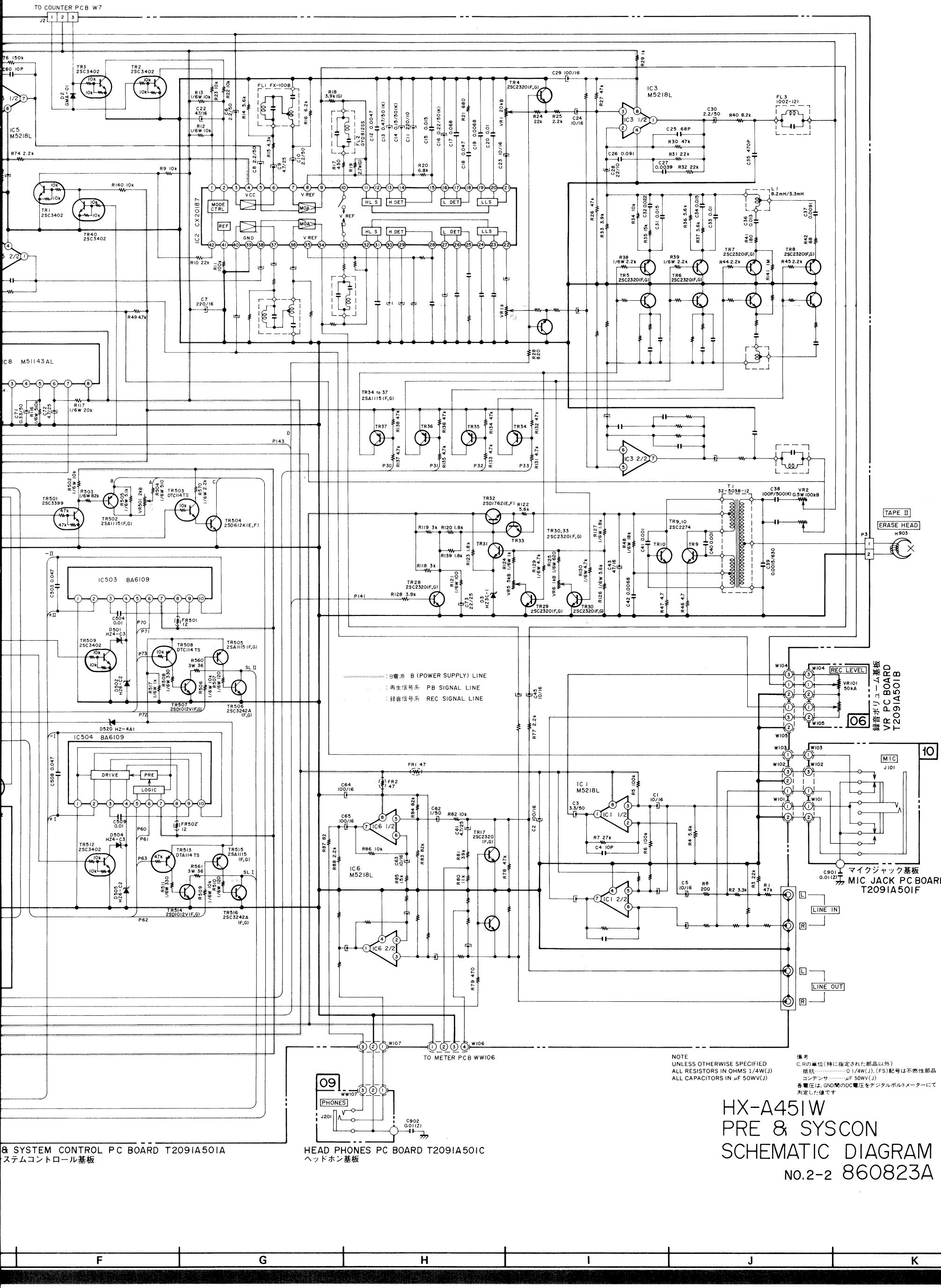
ヘッドホン基板
HEAD PHONE PCB
T2041A501C

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

備考
C. Rの単位(特に指定された部品以外)
抵抗……Ω1/6W(J), (FS)記号は不燃性部品
コンデンサ……μF 50WV(J)
各電圧は、GND間のDC電圧をデジタルボルトメーターにて測定した値です

HX-A451W
CONNECTION DIAGRAM
NO. 2-1 860822A3

PRE AMP & SYSTEM CONTROL PC BOARD T2091A501
プリアンプ/システムコントロール基板


TO COUNTER PCB W7
J2
IC5 M5218L
IC2 CX20187
MODE CTRL
REF
GND
VCC
V REF
HL S
H DET
L DET
LLS
IC3 M5218L
IC3 1/2
IC3 2/2
FL1 FX-100B
FL2 GYD8122SS
FL3 100Z-121
L1 8.2mH/3.3mH
T1 32-5038-12
TR1 2SC3402
TR2 2SC3402
TR3 2SC3402
TR40 2SC3402
TR4 2SC2320(F,G)
TR5 2SC2320(F,G)
TR6 2SC2320(F,G)
TR7 2SC2320(F,G)
TR8 2SC2320(F,G)
TR9,10 2SC2274
TR28 2SC2320(F,G)
TR29 2SC2320(F,G)
TR30 2SC2320(F,G)
TR30,33 2SC2320(F,G)
TR31
TR32 2SD1762(E,F)
TR33
TR34 to 37 2SA1115(F,G)
TR501 2SC3399
TR502 2SA1115(F,G)
TR503 DTC114TS
TR504 2SD612K(E,F)
IC503 BA6109
IC504 BA6109
DRIVE
PRE
LOGIC
TR509 2SC3402
TR508 DTC114TS
TR505 2SA1115(F,G)
TR507 2SD1012V(F,G)
TR506 2SC3242A (F,G)
TR512 2SC3402
TR513 DTA114TS
TR515 2SA1115 (F,G)
TR514 2SD1012V(F,G)
TR516 2SC3242A (F,G)
IC1 M5218L
IC1 1/2
IC1 2/2
IC6 M5218L
IC6 1/2
IC6 2/2
TAPE II
ERASE HEAD
H903
REC LEVEL
VR101 50kA
06
録音ボリューム基板
VR PC BOARD
T2091A501B
MIC
J101
10
マイクジャック基板
MIC JACK PC BOARD
T2091A501F
LINE IN
LINE OUT
L
R
09
PHONES
J201
WW107
TO METER PCB WW106
W101
W102
W103
W104
W105
W106
W107
P3
P141
P143
P30
P31
P32
P33
P61
P62
P63
P70
P71
P72
P73
SL I
SL II
D501 HZ4-C3
D502 HZ6-C2
D504 HZ4-C3
D505 HZ6-C2
D520 HZ-4AI
D3 HZ3C-1
FR1 47
FR2 47
FR501 12
FR502 12
R117 1/6W 20k
R116 1/6W 510k
C71 0.33/50
C72 4.7/25
C503 0.047
C504 0.01
C508 0.047
C509 0.01
C60 10P
C76 150k
R74 2.2k
R140 10k
R9 10k
R49 4.7k
R29 1k
C29 100/16
C30 2.2/50
R40 8.2k
C25 68P
R30 47k
R31 22k
C26 0.091
C27 0.0039
R32 22k
C35 470P
C28 22/10
R24 22k
R25 2.2k
C24 10/16
R27 47k
R26 47k
R33 3.9k
R34 10k
C32 0.022
C31 0.015
R35 15k
R36 5.6k
C34 0.015
R37 5.6k
C33 0.01
C36 0.013
C37 0.0091
R41 180
R42 68
R38 1/6W 2.2k
R39 1/6W 2.2k
R44 2.2k
R45 2.2k
R41 1M
C45 10/16
R77 2.2k
C64 100/16
C65 100/16
R84 82k
C62 1/50
R82 10k
C61 4.7/25
R87 82
R88 2.2k
R86 10k
R83 82k
R85 15k
R81 39k
R80 11k
R78 47k
R79 470
C63 10/16
C2 100/16
C3 3.3/50
R5 100k
C1 10/16
R7 27k
C4 10P
R4 5.6k
R6 100k
C5 10/16
R8 200
R2 3.3k
R3 2.2k
R1 47k
C901 0.01(Z)
C902 0.01(Z)
R502 1/6W 10k
R503 1/6W 82k
R505 5.1k 1/6W
R504 1/6W 510
R570 1/6W 2.2k
VR501 2kB
R119 3k
R120 1.8k
R139 1.8k
R118 3k
R123 1.8k
R121 1/6W 100
R128 3.9k
C73 22/25
R122 5.6k
R127 1/6W 1.8k
R48 1/6W 18k
C41 0.001
C40 0.001
C43 47/16
C42 0.0068
R47 4.7
R46 4.7
C39 0.0015/630
C38 100P/500(K)
VR2 0.5W 100kB
R124 1/6W 1k
R125 1/6W 620
R126 1/6W 5.6k
R129 1/6W 4.7k
R130 1/6W 4.7k
VR5 5kB
VR6 1kB
R138 47k
R136 47k
R135 47k
R134 47k
R132 47k
R137 47k
R133 4.7k
R131 4.7k
R560 3W 36
R561 3W 36
R506 1/6W 10k
R507 1/6W 120
R508 1/6W 330
R517 1/6W 1k
R509 1/6W 10k
R510 1/6W 120
R511 1/6W 330
R517 1/6W 1k
R10 22k
R11 100k
C7 220/16
R18 3.9k(G)
R19 2.7k(G)
R17 430
R20 6.8k
R23 10k
R22 10k
R14 5.6k
R15 4.3k
R16 6.2k
C6 2.2/50
C8 2.2/50
C9 4.7/25
C10 2.2/50
C22 47/16
R12 1/6W 10k
R13 1/6W 10k
C12 0.0047
C13 0.47/50(K)
C14 0.15/50(K)
C11 220/10
C15 0.015
C16 0.22/50(K)
C17 0.068
C18 0.047
R21 680
C19 0.0068
C20 0.01
C23 10/16
VR1a 20kB
VR1b
R28 820
R26 47k
R27 47k
R31
R33
R34
R35
R36
R37
R38
R39
R41
R42
R44
R45
R46
R47
R48
R123
R124
R125
R126
R127
R128
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R135
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R596
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R602
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R605
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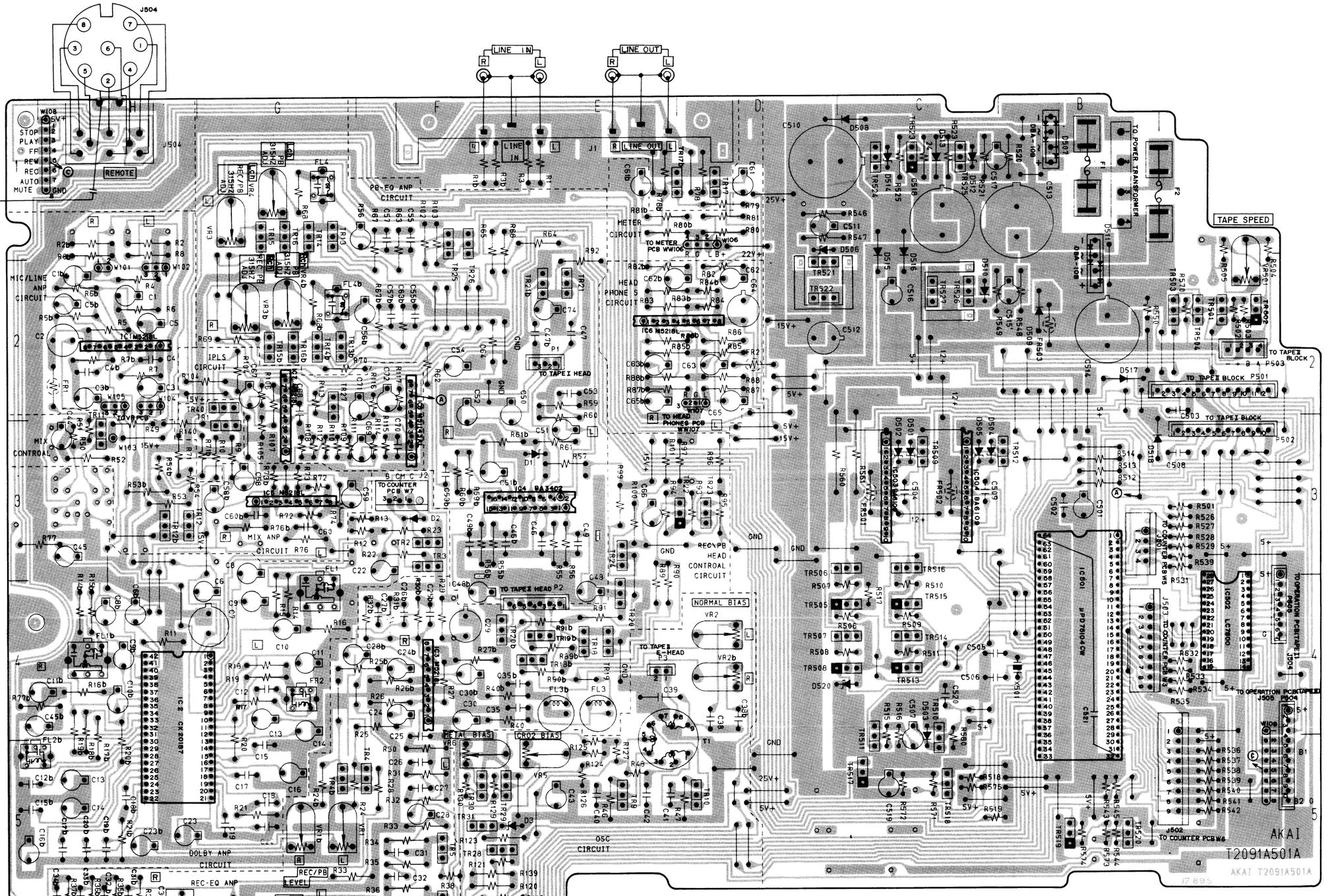
R607
R608
R609

LOCATION OF COMPONENT

IC1	H2
IC2	H4
IC3	F4
IC4	F3
IC5	G3
IC6	E2
IC7	G3
IC8	F3
IC501	B4
IC502	A4
IC503	C3
IC504	C3
TR1	G3
TR2	F3
TR3	F3
TR4	F5
TR4b	G5
TR5	F5
TR5b	H6
TR6	F6
TR6b	H6
TR7	G6
TR7b	H6
TR8	G6
TR8b	G6
TR9	E5
TR10	E5
TR11	H3
TR12	H3
TR12b	H3
TR13	G1
TR13b	G2
TR14	G1
TR14b	G2
TR15	G1
TR15b	G2
TR16	G1
TR16b	G2
TR17	D1
TR17b	E1
TR18	E4
TR18b	E4
TR19	E4
TR19b	E4
TR20	E4
TR20b	F4
TR21	E2
TR21b	E2
TR22	E3
TR23	D3
TR24	E3
TR25	F1
TR26	F1
TR27	G2
TR28	F5
TR29	F5
TR30	F5
TR31	F5
TR32	F6
TR33	F6
TR34	F6
TR35	F6
TR36	F6
TR37	F6
TR40	G2
TR501	A2
TR502	A2
TR503	A2
TR504	A2
TR505	C4
TR506	C3
TR507	C4
TR508	C4
TR509	C4
TR510	C4
TR511	C4
TR512	B3
TR513	C4
TR514	C4
TR515	C4
TR516	C3
TR517	C5
TR518	C5
TR519	B5
TR520	B5
TR521	D2
TR522	D2
TR523	C1
TR524	C1
TR525	C1
TR526	C2
TR527	C2



= NPN TRANSISTER

= PNP TRANSISTER

PRE AMP & SYSTEM CONTROL PCB T2091A501A

プリアンプ/システムコントロール基板

2SD612K	TR504
2SC1845	TR18, TR18b,TR19, TR19b
2SC2320	TR4, TR4b, TR5, TR5b, TR6, TR6b, TR7, TR7b, TR8, TR8b, TR11, TR12, TR12b, TR13, TR13b, TR14, TR14b, TR15, TR15b, TR16, TR16b, TR17, TR17b, TR20, TR20b, TR21, TR21b, TR23, TR24, TR27, TR28, TR29, TR30, TR31, TR33
2SC2274	TR9, TR10
2SC3402	TR1, TR25, TR26, TR40, TR501, TR511, TR509, TR512
DTC114TS	TR503
2SD1762	TR522, TR527, TR32
2SC3399	TR520, TR518, TR501
2SC3383	TR521
2SC2603	TR525, TR526
2SC3242A	TR524
2SA1115	TR34, TR35, TR36, TR37, TR502, TR523
2SA992	TR22
2SB774	TR519, TR517

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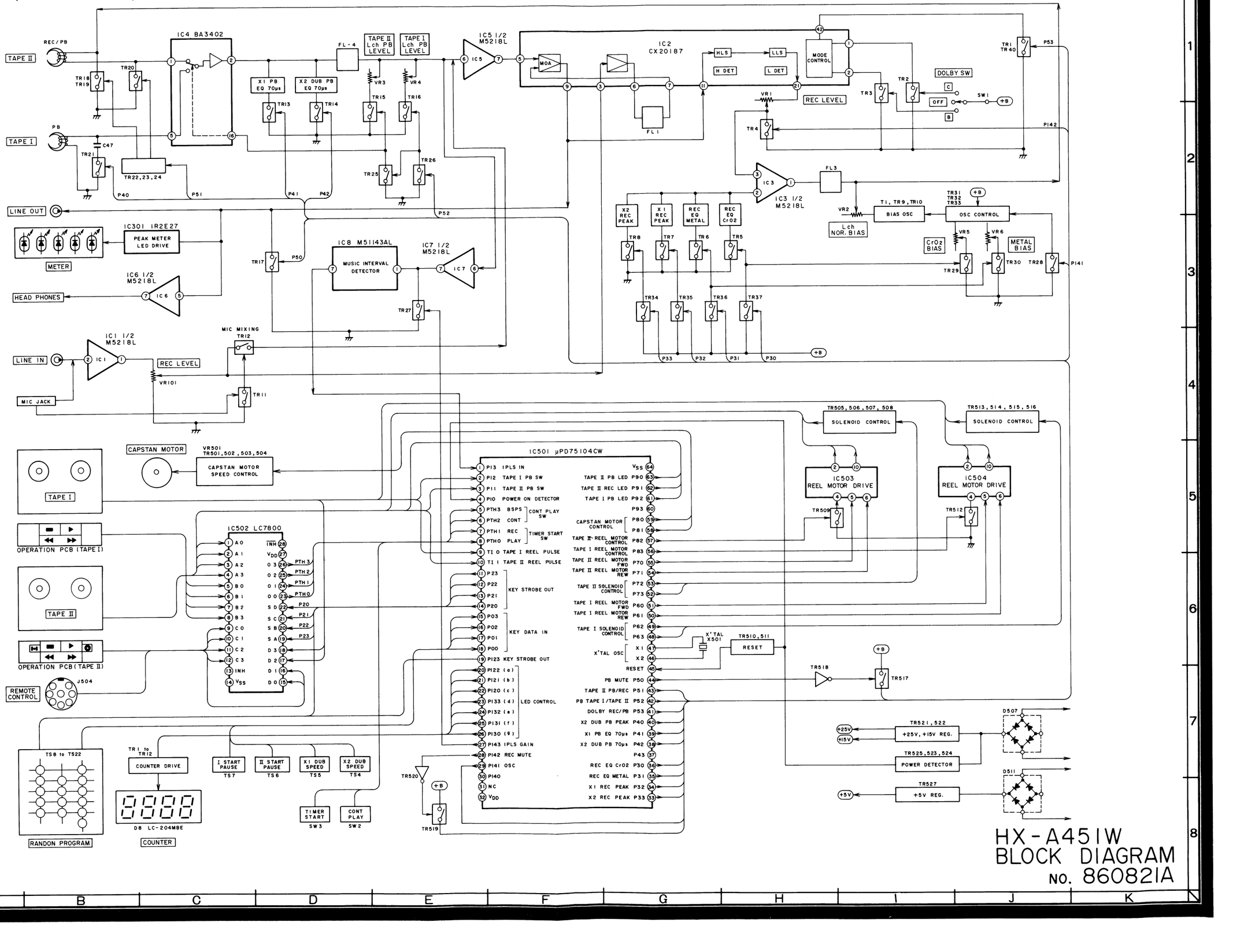

HX-A451W
BLOCK DIAGRAM
NO. 860821A